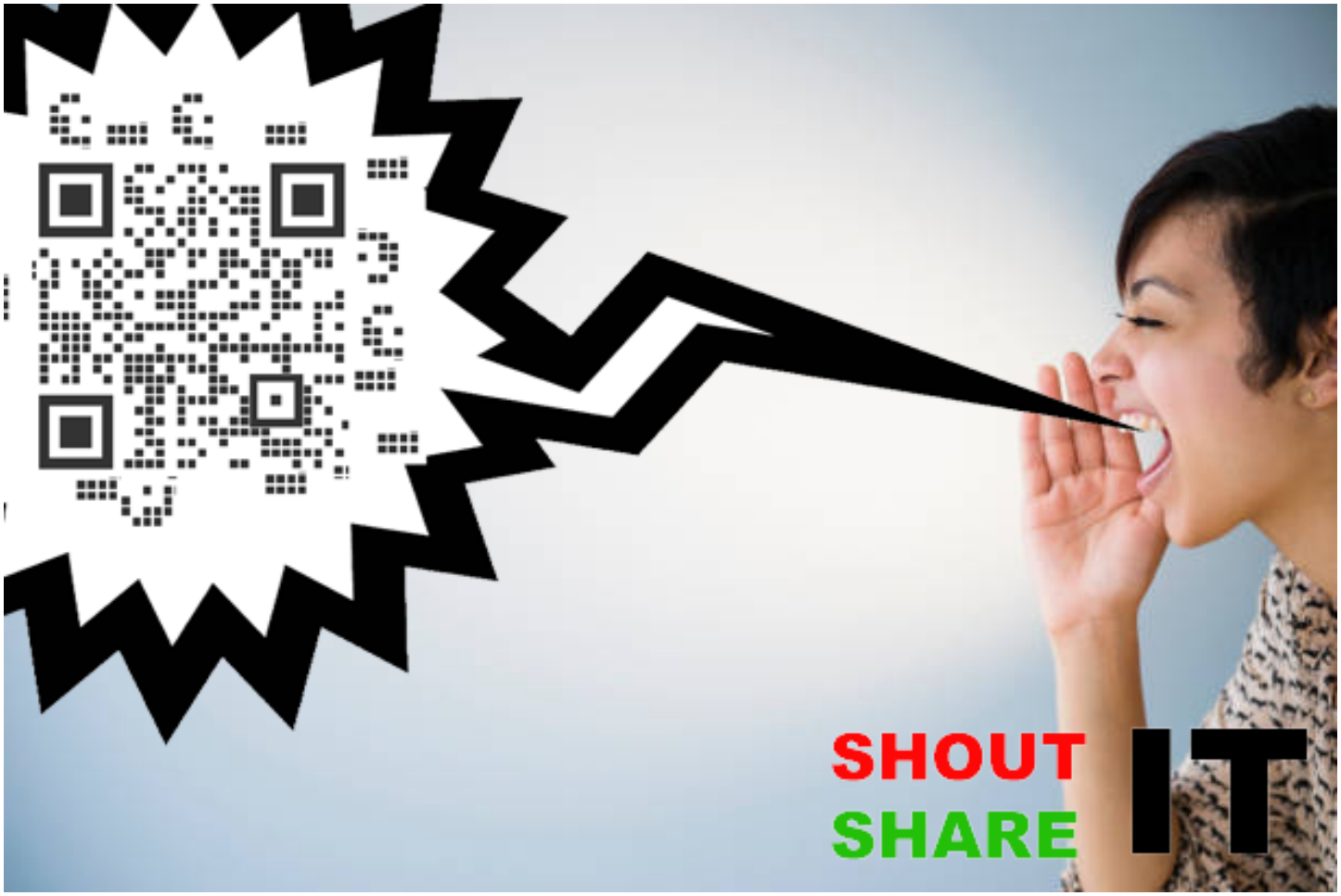
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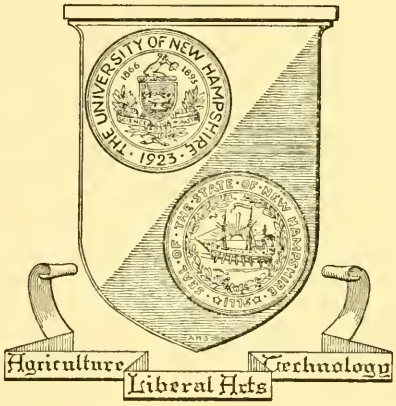

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Bulletin 298 June, 1937

LAND UTILIZATION IN NEW HAMPSHIRE

I.

PROBLEMS IN THE BACK HIGHLAND AREAS OF SOUTHERN GRAFTON COUNTY

By
HARRY C. WOODWORTH, MAX F. ABELL,
AND JOHN C. HOLMES.

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TABLE OF CONTENTS

	Page
Introduction	5
Procedure	6
Physical and Climatic Features	7
Present Use and Occupancy of Land	8
Agriculture	
Tillage Land	10
Dairying	10
Poultry	10
Self-Sufficing Agriculture	11
Forestry on Farms	12
Man Work Units	12
Gross Sale of Agricultural Products	12
Forestry	13
Types and Species	15
Quality	15
The Potential Timber Supply	16
Marketing	17
Summer and Recreational	17
Houses	19
Personnel, Income and Content of Living	20
Age of Operators	22
Family Status	23
Years on the Present Farms	23
Training	24
Income	24
Cash Living Expenses	27
Problems in Public Finance	28
Roads	29
Schools	32
History of the Area	46
Discussion of Public Policies	
General	53
Discussion of Four Programs	57
Realignment of People	59
Reorganization of Local Government	61
Developing Resources	65
Relating People to Resources	67
Summary	69

FOREWORD

With this publication the New Hampshire Agricultural Experiment Station ventures into a new field of research. It is a field of the utmost importance, involving the relationships of man to his local government and institutions and to the land itself.

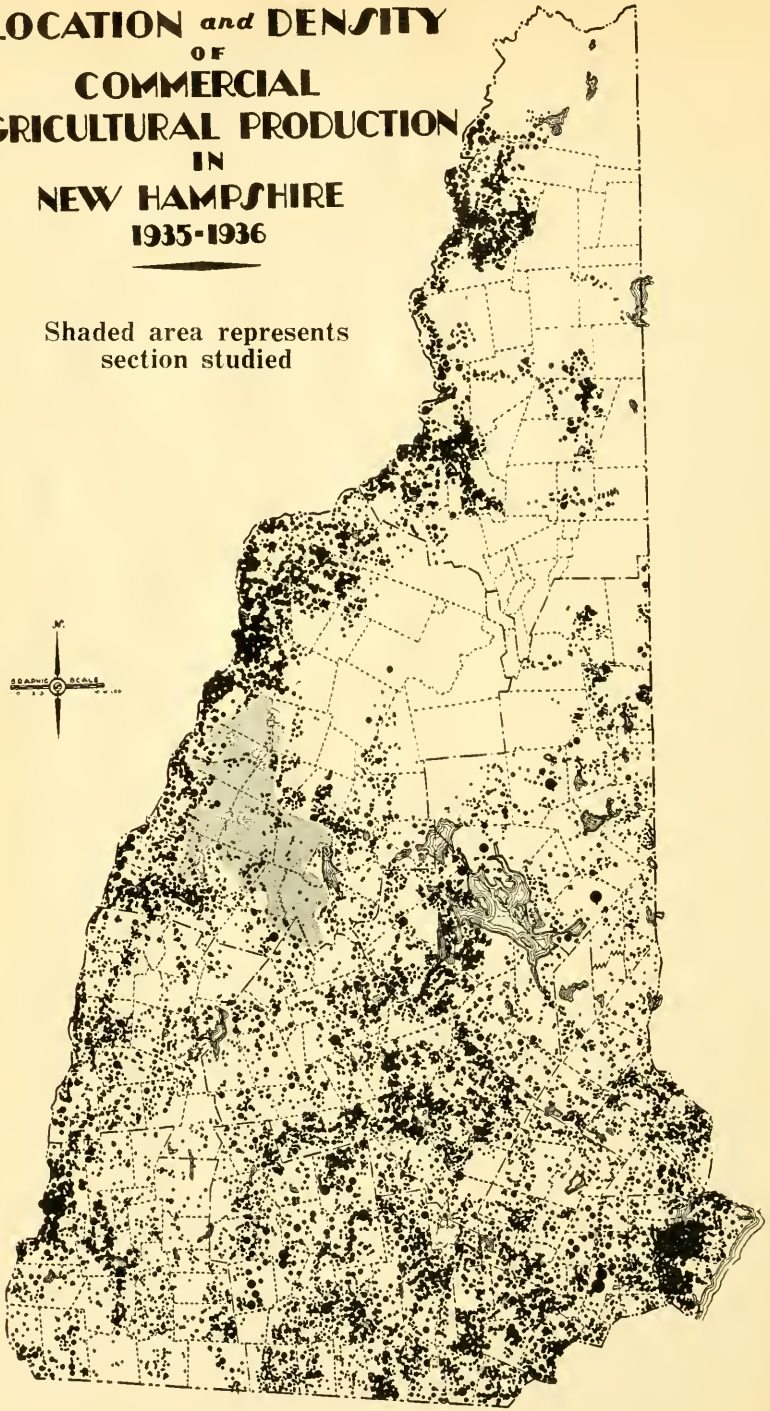
The study has been made with great care, and we believe there will be little dispute so far as the accuracy of data is concerned. There has been sufficient history for the trends of the region to assume a definite shape. As to the suggestions for future development, of course no such certainty is possible. Therefore, this part of the study is offered with becoming modesty.

Yet to be of real significance such research must dare to attempt to look into the future. In a period when there has been a multiplicity of economic and social changes, we must be prepared to hazard judgment as to future trends. Furthermore, any suggested program must be practical enough to convince fair-minded people of its essential soundness. Nevertheless, the authors have not deserted their task when it comes to this stage. They have proposed a program which may seem to some of the inhabitants of the region too much of a break with the past. But we trust that the suggestions will be received, as they are offered, in an impartial spirit of desire for human betterment and sound economic development.

J. C. KENDALL, *Director.*

LOCATION and DENSITY OF COMMERCIAL AGRICULTURAL PRODUCTION IN NEW HAMPSHIRE 1935-1936

Shaded area represents section studied



AGRICULTURAL EXPERIMENT STATION
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Land Utilization in New Hampshire

By Harry C. Woodworth, Max F. Abell, and John C. Holmes

INTRODUCTION

The waste of property and human resources resulting from maladjustments in the relation of people to land in many of the back areas of the State has long been evident. The abandonment of farms in the highland areas has resulted in the isolation of many rural families. These stranded people have not had a favorable opportunity to participate fully in the progress made in the last two decades in improved transportation facilities, new skills in specialized farming, and the increasing services of public institutions.

In an era of expanding standards of living, each year has brought a lower living content to many families and in contrast to more favored locations they have been especially handicapped by declining yields, inadequate markets, poor roads, lack of resources and in many instances by a psychological defeatist attitude. Partial abandonment of locations has resulted in serious maladjustments in public services, and this in turn has tended to check the development of potential resources.

It is very easy for a state, absorbed in the progress of the expanding and developing portions of its agriculture and the growing demands of its industry, to ignore and leave untouched the areas that fall behind. Some would avoid a description of the plight of stranded families and place all emphasis on the happier portions of the social order. But a state should face frankly the maladjustments in certain of its areas and seek to discover means of realignment of people, land, and institutions.

An examination of the present land use indicated many areas in New Hampshire in which little or no commercial agriculture appears. (Note the white areas in Fig 1.) Some of these areas were never cleared and settled, being for the most part mountainous and non-agricultural. Other areas were at one time thickly populated and farmed, but have declined greatly in both population and agricultural activity since 1860.

The objective of this study has been to isolate and describe the problems, and as far as possible build a foundation on which public policy might be intelligently constructed as to their solution. For this purpose an area in western New Hampshire in southern Grafton County was selected. This comprises the highland area back from the Connecticut River, and is made up of portions of the towns of Piermont, Orford, Warren, Wentworth, Lyme, Dorchester, Groton, Hebron, Hanover, Canaan, Orange, Alexandria, Danbury, and Grafton.

After a preliminary survey of the general region a definite area was delimited for special study. The boundary line enclosing this area as shown on the maps is not significant except that the data for the report are confined to the situation within the lines.

FIG. 1. Each dot in the map on the opposite page represents the location and size of a commercial agricultural enterprise. The large white areas are mostly mountainous and uninhabited. Note that the shaded area comprising this study has little agriculture as compared to other agricultural areas.

PROCEDURE

Records were secured from 252 individual families by personal interview at the farm.[1] These records comprised a brief inventory of the farm and livestock, acres of crops, income from sales, outside work and other sources, farm expenses, personal living expenses, a brief record of personnel in the household, and a few items on social activity of the families.

The interviewer noted roughly the size and condition of the buildings and checked the condition of the road.

Town inventories were copied and selectmen of the towns were consulted in order to locate more accurately the properties in the inventories. In Dorchester and Groton the town inventories extending over 100 years were examined to obtain historical data. School officers were interviewed in securing statistics on transportation of children and other data.

A forester was delegated to map the forest cover in Dorchester in detail as to type, size, age class, and to make estimates on volume of each class. Later, another forester analyzed the situation from the point of view of marketing the timber that would be made available under a sound forest management program.[2]

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[1] Detailed records were secured from all but 37 places within the area. For the most part these were isolated families who could not be found at home, had moved away before field work was completed, or were reluctant to give details. The agricultural production and sales of these farms were negligible. In the preliminary field work on this study a larger area was surveyed and 637 families were interviewed.

[2] Before the field work had been completed, the opportunity came to submit an action program to the Land Utilization Division of the United States Department of Agriculture. At that time there appeared the possibility that the White Mountain Forest Service might cooperate to the extent of purchasing the wild interior lands and employing some of the local people in forest development. The Rehabilitation Administration according to the plan was to purchase at voluntary sale some of the more isolated farms which represent problems in road and school costs, and these were to be added to the White Mountain holdings. The project was dropped due to the indefiniteness of the Rehabilitation Program at that time.

PHYSICAL AND CLIMATIC FEATURES OF THE AREA

On the whole the terrain is rather rough and bold. (Plate 1, p. 33) Within the area are Mount Cardigan, 3,121 ft. elevation; Mount Cube, 2,914 ft. elevation; Smart's Mountain, 3,240 ft. elevation, and several lesser mountain ridges. There are a few level intervales at about 1,000 feet elevation, but most of the fields and former fields are on the tops or sides of ridges or on broken upland. Rocks, exeept on the intervales, are numerous and impede cultivation.

Approximately 45 per cent of the area (Table 1) is above 1,500 feet and probably is handicapped by climatic conditions in its erop produetion especially if there is air drainage from higher lands. There are very few going farms above 1,500 ft. elevation in the State. Some of the original home sites in this area were as high as 1,900 ft., but since these were the first to be given up it would appear that unfavorable elimatic eonditions may have been the ehief factor in this early abandonment. There are a few occupied places at present near the 1,500 ft. level, but these are not operated aggressively as farms and the air drainage in these particular spots may be advantageous.

TABLE 1. *Acreage of region, arranged by elevations.*

Elevation (feet)	Acreage	Per cent
500 to 1,000	22,723	12.0
1,001 to 1,500	80,477	42.5
1,501 to 2,000	62,488	33.0
2,001 to 2,500	21,208	11.2
Over 2,500	2,461	1.3
	189,357	100.

The growing season is probably about 110 days with considerable variation as to particular location. This compares with 130 days in the Connecticut Valley a few miles to the west.

The soil is variable as in most parts of the State. (Plate 2, p. 34.) Fine sandy loams, stony loams, stony rough land, soils too wet for crops, gravel, and rock outcrop can be found. In general, many of the tillage fields are good loams and are capable of supporting good yields if managed with livestock and lime. For the most part they are difficult to work and depreciate rapidly if not managed aggressively.

In the preliminary mapping by the Soil Survey[1] about 40 types or sub-types were found.

For purposes of this report these types were regrouped into five classes: namely, (1) good for crop land, of which there were 24,412 acres, 13%; (2) fair for crop land, 18,779 acres, 10%; (3) soils suitable for pasture, 56,337 acres, 30%; (4) soils suitable for forest, 84,505 acres, 45%; and (5) non-agricultural and non-forest land, 3,756 acres, 2%.

This classification should not be taken to indicate that these lands are now usable for these purposes, but rather as the potential possibilities if the present trends should ever be reversed. The land classified as good for crops is good only if clear and managed with livestock. The yields on much of it would be disappointing under present conditions, although it is physically possible to develop it into good yielding land at some expense in time, labor, and capital. Much of the land classified as pasture is now in timber and has potential possibilities only if under a long-time management plan. There is nothing in the present economic outlook to suggest that future prices of milk and other products would bring forth the development and management required, but the classification is included here because the location of these grades of land is important in future planning of the area. Under the present outlook one would consider for agriculture only the better soils of the present tillage land. From a practical viewpoint, priority should be given to those tillage acres which have been well managed in recent years. A study of this generalized soil map indicates the small amount of potential good crop land.

PRESENT USE AND OCCUPANCY OF LAND

About 8,000 acres[2], or 4.2 per cent of the area, is in open tillage fields. Other land areas except for small pieces of open pasture are pretty well grown up to timber or brush.[3]

The tillage land is mostly in hay, and many fields really represent a stage in the normal abandonment process in which hay is harvested each year until the yields are not sufficient to induce neighbors to harvest the crop. Thus, for a dozen years after the farm ceases to be operated

[1] The field work for the Grafton County Soil Survey was completed in 1935 in cooperation with the U. S. Bureau of Soils. The report is not yet published.

[2] The total acreage of tillage land as estimated on 252 survey records was 6,414 acres. Including estimates on the 37 remaining places and summer homes would bring the total to approximately 8,000 acres.

[3] The detailed survey of Dorchester indicates 3.45 per cent of land area in tillage land and 7.67 per cent in pasture. Other open land is small areas in former pastures and fields not yet fully claimed by the forest.

aggressively, hay may be sold or given away standing. When no longer mowed, brush soon claims the field.

The occupied places accounted for 15 per cent, and property associated with summer residences about seven per cent, of the total area. The remaining 78 per cent consists mostly of timber lots and wild lands, held, usually in large blocks[1], by corporations and individuals for timber growth. The vacant or recently abandoned farms are usually held for timber production and, of course, the occupied farms and summer places are largely in forest growth. Table 2 is more a description of land associated with occupancy than of land utilization.

Agriculture

For purposes of this study all the 289 occupied places were considered as farms. The thirteen locations too small to be classed as census

TABLE 2. *Acreage and assessed value by types of occupancy.*

	Acreage		Assessed Values		
				Per cent of	
	Acres	Per cent	Amount	Land and Buildings	Total
Occupied places	28,536	15.1	$342,671	18.8	14.4
Summer places	12,255	6.5	363,985	20.0	15.3
Vacant and abandoned	12,943	6.8	132,420	7.3	5.6
Wild lands	121,947	64.4	943,955	51.8	39.7
Mines and mining rights	1,233	.6	37,855	2.1	1.6
State and church lands	4,491	2.4			
Lakes, roads, waste, etc.	7,952	4.2			
Total land and buildings	189,357	100.	$1,820,886	100.	76.6
Power lines			501,550		21.2
Total land, buildings and power lines			$2,322,436		97.8
Personal property			52,357		2.2
Total all property			$2,374,793		100.

[1] A rough ownership map showing larger holdings in the region and a detailed property map of Dorchester are available for reference at this Station.

farms represent situations little different from those of many larger places where farming is not undertaken. Most of the places had been operated as farms at one time.

Tillage Land

The acreage in tillage land is more a measure of the farming done twenty years ago than of present activities. The present acreage exaggerates the importance of agriculture, since many of the fields are too rough, too rocky, or too infertile to have much promise as to future possibilities. Thus, while the average of 27 acres of tillage land per farm compares favorably with many other sections of the State, the present condition of the tillage land and the trend toward lower yields indicate that the acres in tillage are likely to decline in the next few years. The approximate amount and location of tillage can be noted in Plate 3. (See page 35.)

New Hampshire soils can generally be maintained only if associated with livestock and aggressively managed. It is often said that the operators farm around the manure pile; when the ratio of stock to acres of tillage becomes somewhat wide, the yielding capacity of the land decreases. Of the 6,414 acres of tillage land reported on 252 farms, 49 per cent were associated with less than .2 of a cattle unit per acre. This soil is declining in fertility, and under present management will probably be in brush by 1955.

This is mentioned here because, regardless of any opinion as to the future possibilities of these farms, half the present tillage land either has reached or will soon reach a stage where use in agriculture will be prohibitive. Thus the effective tillage land is not large, and the present trend indicates a further decline.

Dairying

While the predominant farm enterprise is dairying, only 48 of the 252 operators had more than five cows; 51 had one cow; and 69 were without a cow. Due to location many individual farms have not had access to dependable markets. The individual operator was handicapped in getting the small volume of milk to market every day over poor roads, and little possibility existed for cooperative effort in hauling to the nearest local station. In recent years State roads have pierced certain areas, and while this may stimulate dairying on a few well located individual farms the opportunities for expanding commercially are not encouraging.

Poultry

Eight farmers had over 300 hens and might be considered commercial poultrymen. One had approximately 600 hens. On 169 farms no hens were reported.

In certain areas of the State poultry has replaced cattle on farms where tillage is difficult, and this adjustment has checked abandonment; but in this area there is only a trace of such change. The poultry enterprise, as carried on in New Hampshire, is not very definitely related to the use of land. All grain is purchased, and only a small area of open land is used for range in growing pullets.

It is technically possible from the production side to have many small or large poultry enterprises in this area. Every location represents a potential poultry site if we ignore the handicaps of hauling grain over hilly back roads, of extra marketing costs, and the social costs involved in maintaining public services of roads and schools to scattered and isolated places.

Since the availability of sites is not the limiting factor, the problem is one of relating poultry to the best sites. The permanent presence of specialized poultry enterprises can be considered quite apart from the crop and livestock farms and may well be encouraged wherever other factors or other poultry enterprises indicate good possibilities for the communities' future. In evaluating an area from a viewpoint of

This picture was taken to illustrate a small irregular field. It is an example of the beauty of small vistas created by the encroaching forest. Scenes such as this endear the State to summer residents.

land, people and institutions, the presence of these isolated enterprises can be ignored because they have little relation to the land.

If people are to continue to live in the back parts of the area and to be dependent upon the land for a portion of their sustenance, they should no doubt produce eggs and poultry for their own use and also grow the grain that enters into such production. If the area is subject to further abandonment, the presence of an isolated poultry enterprise should not determine public policy.

Self-Sufficing Agriculture

Since 27 per cent of the places had no cows and 67 per cent had no hens, it is inaccurate to describe all the non-commercial farms as self-sufficing. Certainly a number of them are merely rural homes without much attempt at either self-sufficing or part-time farming.

Forestry on Farms

While a considerable portion of the area in farms is woodland, it furnished little activity except for cordwood for home use. Total sales amounted to $17,521, or an average of $69.00 per farm. On 180 of the farms no sales were reported. On two farms small saw-mills harvested timber from the woodlots. Milling was in these cases an integral part of the farm organization. The importance of forestry is not confined to the individual farm woodlots, and the relation of the farm operators to the timber resources of the area as a whole will be taken up in a later section.

Man Work Units

On the basis of estimates of the days of work normally required to grow and harvest the crops and take care of the livestock, the average organization represented 74 man work units or somewhat less than one-third of a full one-man farm. Seventy-eight places represented less than 50 man work units and can be regarded as rural residences. Only 26 had over 200 man work units and might be considered full one-man farms. This measure indicates the size from an organization point of view, but since much of the tillage is not aggressively operated and yields are low, the situation is exaggerated on partially abandoned farms. The location and extent of agriculture according to this measure are indicated in Plate 4. (Page 36)

Gross Sales of Agricultural Products

Gross sales of agricultural products give a more accurate measure of the extent of the present commercial agriculture. A summary of 252 records, which include practically all the actual farms, shows a gross income from sale of agricultural non-forest products for 1934 of $73,426. Thus, an area comprising 3½ per cent of the acreage of New Hampshire accounts for only .5 per cent of the State's commercial agriculture.

The distribution of farms according to gross sales of agricultural products shows the situation in detail and indicates the low returns on most farms. Forty-six per cent of the farms sold less than $50 worth of agricultural products, and only eight per cent sold more than $1,000 worth.

The farm organization of the groups with low sales of agricultural products indicates that the operators are not equipped or prepared for commercial farming. In the case of Group I, with less than $50 sales per farm, the average farm can be briefly described as 57 acres of woodland and wooded pasture, 17 acres of open tillage, 1 cow, ½ heifer, ½ horse, 8 hens, and .4 pig. The livestock represents roughly the present carrying capacity of the farms when all grain is purchased. The situation in other groups can be noted in Tables 3 and 10. The extent of sales on individual farms by location is indicated in Plate 5. (Page 37)

From a commercial farming viewpoint the production of this area is not important and the trend seems to indicate further decline. On a few good farms well located as to main roads the production of crops and livestock products may well become more intensive in the next

TABLE 3. *Descriptive factors of five groups of farms sorted according to gross sales of agricultural products.*

	Farms grouped by gross sales of agricultural products					All
	0-$50	$51-$100	$101-$500	$501-$1000	Over $1000	
	Group I	Group II	Group III	Group IV	Group V	
Number of farms	118	24	57	34	19	252
Acres in woodland and pasture	57	84	124	118	138	96
Acres in tillage	17	18	33	37	54	27
Number of:						
Cows	1	1.6	2.8	6.6	12.2	3.0
Heifers	.5	.8	1.6	2.5	6.3	1.5
Horses	.5	.7	1.3	1.8	2.3	1.0
Hens	8.0	20.0	21.0	39.0	117.0	24.0
Pigs	.4	.6	.5	.7	1.4	.6
Sheep	.....	1.1	1.8	.9	.....	.7
Value of farm	$914	$909	$1,407	$1,937	$3,102	$1,328

decade. Such farms may afford reasonable opportunities for a satisfactory content of living. On the other hand, many places can offer only very meager living, and the social cost in maintaining roads and schools will be very great in proportion to the actual service.

In summary, the agriculture of the area may be briefly described as a pattern of scattered rural residences in a forest area with here and there a small wholesale dairy or poultry farm. Only a few operators depend on agricultural production for their living.

FORESTRY[1]

Forest resources are of major importance in the future of the area. The occupants of farms are for the most part dependent upon outside work for their living and timber offers the chief possibility of employment in the years to come.

In order to get more accurate information as to the present status of the timber resources a detailed cover survey of the town of Dorchester was made[2] in 1932. Later on, additional work was undertaken in relating the present cover to marketing possibilities.[3]

Four strips were taken across the larger area, and Dorchester seemed a fair sample of the situation. The total volume estimate for the town was 76,815,373 boardfeet. This is an average of 3,010 boardfeet per acre of timberland. (Table 4)

[1] This section is based largely on reports by Carl Walker and C. P. Cronk on the Dorchester Forest Problem.

[2] Mr. Carl Walker, forester, made this cover survey in 1932. Professor K. W. Woodward, Mr. Kenneth Barraclough, and Mr. C. S. Herr, Extension Foresters, supervised certain phases and gave assistance in working out procedure.

[3] A report on utilization of forest products from Dorchester by C. P. Cronk.

TABLE 4. *Estimate of timber volume by types and species in Dorchester in 1932.*

Species	Board ft.	Per cent of total volume by species	Percentage of species making up each type						
			Type						
			Northern hardwood	Spruce hardwood	Pine hardwood	Spruce Fir	White pine	White birch aspen	White birch
Balsam fir	5,835,328	7.6	4.6	16.5	6.5	11.9	0.7	0.9	.....
Spruce	24,829,874	32.3	20.0	40.1	5.5	74.1	7.1	3.5	11.1
Hemlock	4,807,892	6.3	6.5	13.2	0.5	1.3	.4	.....	2.0
White pine	4,159,032	5.4	2.2	7.0	68.5	7.8	83.9	1.6	3.7
Unestimated	783,461	1.0	.3	0.9	.....	0.9	6.1	28.2	.....
Total softwoods	40,415,587	52.6	33.6	77.7	81.0	96.0	98.2	34.2	16.8
Paper or white birch	5,097,113	6.6	7.2	7.6	8.7	2.0	1.5	2.8	63.9
Yellow birch	9,068,694	11.7	17.7	4.6	.....	0.6	.3	0.4	1.6
Maple	8,216,427	10.8	16.8	1.2	.1	0.3	.....	0.5	2.0
Ash	2,603,304	3.4	5.3	0.6	.....	0.1	.....	0.1	1.4
Aspen	3,535,495	4.6	5.1	6.4	10.1	0.7	.....	5.6	13.3
Beech	6,170,727	8.0	12.6	1.0	.....	0.3	.....	.....	1.0
Basswood	134,379	0.2	0.3	.....	.....	.....	.....	.....	.....
Red oak	442,726	0.6	0.8	0.4	0.1	.....	.....	.....	.....
Unestimated	1,130,915	1.5	0.6	0.5	.....	.....	.....	56.4	.....
Total hardwoods	36,399,780	47.4	66.4	22.3	19.0	4.0	1.8	65.8	83.2
GRAND TOTAL	76,815,367	100.	100.	100.	100.	100.	100.	100.	100.

Type and Species

Northern hardwood type predominated and represented approximately three-fourths of the timberland. (Table 5) Spruce-hardwoods and spruce-fir were next with 11.4 and 8 per cent respectively.

Spruce made up about one-third of the total volume. Total softwoods comprised 52.6 per cent of the total volume. The chief hardwoods were yellow birch, maple, beech, and white birch, representing respectively 11.7, 10.8, 8, and 6.6 per cent of the total volume.[1]

TABLE 5. *Forest cover in Dorchester by types.*

	Acreage	Per cent of total area	Per cent of woodland
Northern hardwoods	18,859½	64.43	73.90
Spruce—hardwood	2,920½	9.98	11.44
Spruce—fir	2,027½	6.93	7.96
Pine hardwoods	589	2.01	2.31
White pine	271½	.93	1.06
White birch	227½	.78	.89
Aspen	56	.19	.22
White birch—aspen	172	.59	.67
Gray birch—pine	47	.16	.18
Gray birch	97	.33	.38
Cutover and blow	251½	.86	.99
Farm land	1,011	3.45	
Pasture	2,248½	7.68	
Ponds	307	1.05	
Waste	185½	.63	
Total	29,271	100.	100.

In age distribution the areas of 100-year and 30-year classes were large (Fig. 2). The former is accounted for by heavy cuttings of virgin timber in the decade preceding 1840, and the latter by the cutting of a large area in about 1900 for pulpwood. There were practically no stands 80 or 90 years of age. In general, the age distribution and the rapidity of growth offer reasonable opportunity for forest management.

Quality

In the process of lumbering, the more valuable trees and species have been taken out. The stand has evidently been culled over again and again in search for ash, maple, white birch, or other species that happened to be in demand at the time; the quality of the timber growth has thus steadily declined, and cull and weed trees have become dominant. This situation not only checks total annual growth of the younger trees but reduces the quality.

The more recent portable mill operations have left areas growing up to brush. These are of considerable potential value if properly thinned to release the thrifty trees, but of little use for a good many years under the existing competition of growth.

[1] A detailed cover map showing areas by type and age classes for Dorchester is available for reference at the Experiment Station.

Except for small areas, usually difficult to get at, there is very little first quality lumber in the town. The types of growth are not uniform over any large territory, and the complex pattern of the many small type areas makes accurate appraisal of the future possibilities difficult. There is a vast amount of worthless growth along with that which under management would develop good saw timber.

The Potential Timber Supply

The supply of timber available from this area in the distant future, of course, depends on the type of management in the near future, but the present condition of growth determines largely the situation in the next two decades. The annual growth at present was estimated at 155 boardfeet per acre, but only 77 boardfeet would be suitable for lumber.[1] This, of course, is very low as compared to the possibilities under good management.

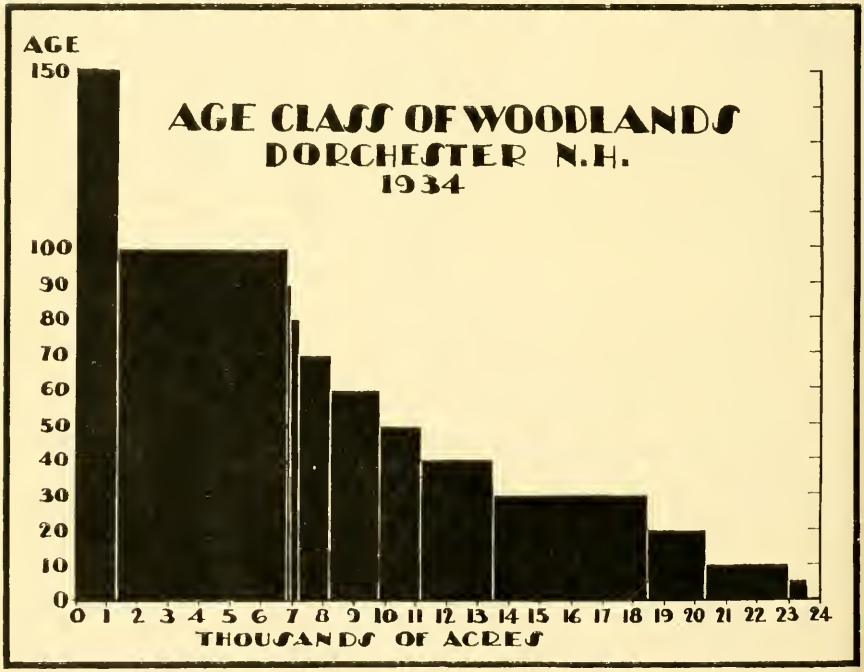


Fig. 2. The distribution of woodland by age classes in 1932 indicates a large proportionate acreage of 100 year old and 30 year old classes. However, the distribution of age groups would make a fairly good foundation on which good management could build.

"In spite of the present condition of the timber of the town under no definite management policy, the manner of cutting

[1] Since 1932 many acres of timberland have been stripped for pulpwood and the potential development of timber resources has been checked. Hard-pressed corporations and individuals have had to market their timber regardless of the effect on future resources. It is estimated that the equivalent of 15,000,000 boardfeet were cut in Dorchester in the three-year period 1933, 1934, and 1935.

which has resulted from the varied mixture of the stand and the diversified demand for different kinds of woods have left the area with the foundation for a very desirable permanent mixture capable of rapid response to forest management."[1]

Marketing

Wood-using industries in the general area are not large but provide a good market for limited amounts of selected logs of certain species. Spool and bobbin plants require maple and birch. Small crutch and tennis racket factories in the adjoining town of Rumney use selected ash. A factory at St. Johnsbury, Vt., sixty miles away, requires selected ash logs for shovel and hoe handles, and two larger factories at Laconia, fifty miles away, take bass and aspen for excelsior and selected logs for a variety of uses.

Much pulpwood is trucked to Lincoln and with the changes in paper-making processes, a wider market even for hardwoods may eventually be available. Practically no market exists for cordwood in the area, and due to location is not likely to develop in the future. Most of the volume of production, however, will need to be shipped or trucked to more distant factories.

Under present trends in timber operations the building and maintenance of forest resources and the possibilities of steady employment of local men therein are not encouraging. Unless the population can relate itself in some way to the forest resources, many families will have to migrate, standards of living will decline still further or relief will have to be materially expanded.

The forest resources can be rebuilt, and under a forest management program the labor of many of the present population would be required in the work of improvement cutting, thinning, etc. Such a program involves many years of waiting, and few individuals or corporations can be expected to change present practices.

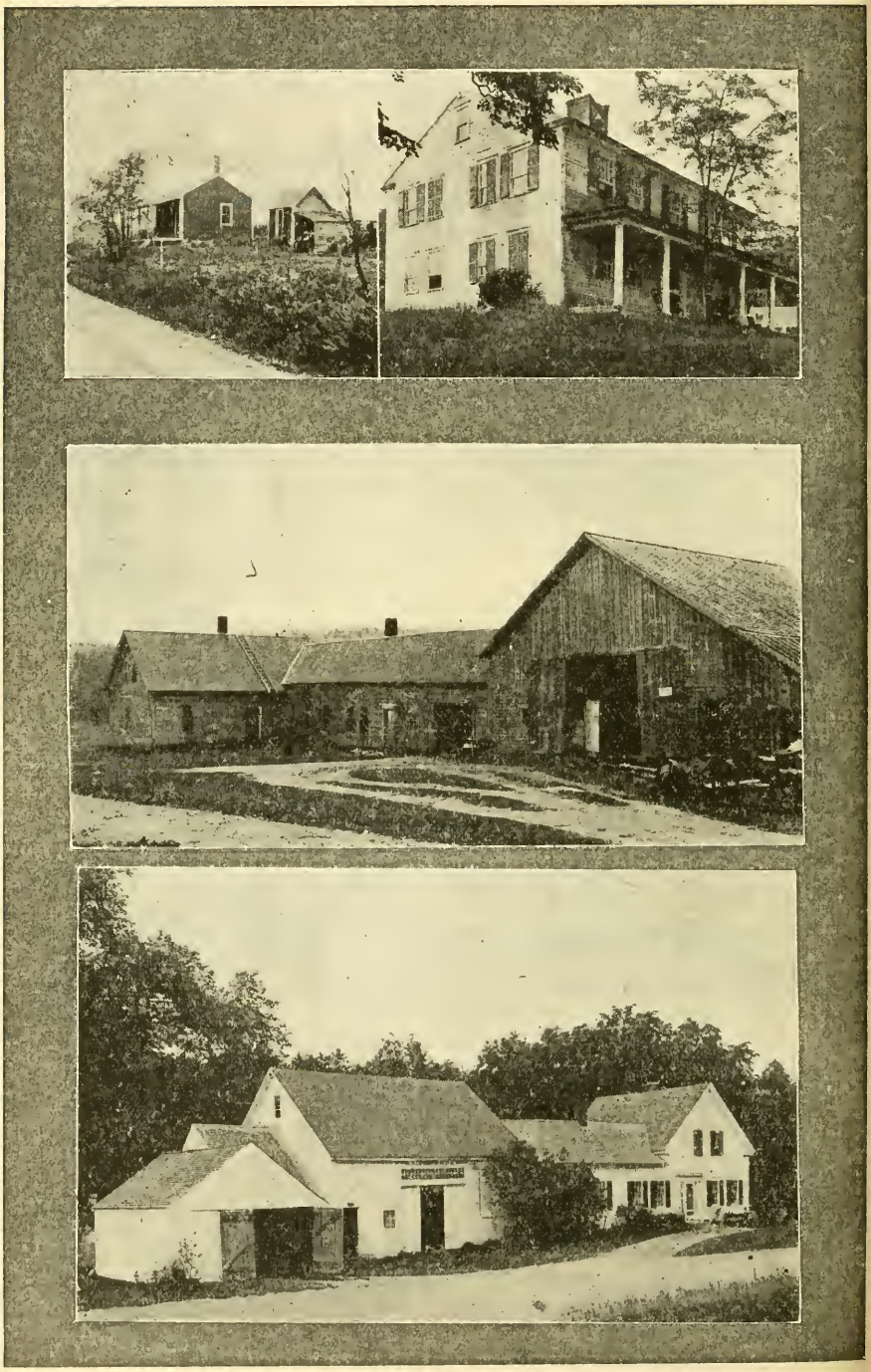
The prediction of a supply and demand situation 50 or even 25 years in the future is especially hazardous. Under public ownership the risk would be shared by the general public, but it is difficult to indicate an intensity of forest management which is in the general interest and not merely a public subsidy to the particular region.

No doubt, some management will be socially profitable and the degree of intensity of management can be altered to fit the social needs of each decade. It is estimated for the purposes of this report that with rather extensive management at least 100 days of labor would be required for each 1,000 acres of timberland.

SUMMER AND RECREATIONAL

There has been some development of summer residences scattered through the area. This has usually been on a modest scale to take advantage of low value farms, and very few of the summer occupancies have resulted in employment for local people. A development at Lake Tarleton in Piermont has taken advantage of a beautiful little lake, and a girls' camp occupies an attractive setting on Cummins Pond in

[1] C. P. Cronk's report.



Houses vary in size and condition. Upper left—A very small house or shack in fair condition. Upper right—A large house in fair condition. Middle—An adequate house in fair condition. Lower—An adequate house in good condition.

Dorchester. There are prospective sites for summer homes and camps, for which a greater demand may, of course, develop.

Since the field work was made for this report, there has been some development in Alexandria. Ski trails on Mt. Cardigan were constructed, the Appalachian Mountain Club remodeled an old building as its local headquarters, and several abandoned places were rebuilt for summer use. Winter sports attracted thousands of recreationists in the 1935-1936 season.

The future summer development is difficult to predict. A return to prosperous conditions may bring a demand for summer homes by a large middle class group. Present occupants may find this a means of disposing of their farms. On the other hand, an increase in summer occupation by families of modest incomes will not materially affect the earning capacity of the year-round occupants who remain.

A small farm-summer home pattern of occupation exists in certain parts of the State in which the local operators carry on subsistence farming and work part time for summer residents for a cash income. But this type of occupation is not so likely in this area because the summer residents will only rarely employ services or purchase local products.

HOUSES

There were 403 houses in the area not including special lake cottages nor buildings in the Lake Tarleton Club development. (Tables 6 and 7) Most of the buildings are the old farm homes in various states of repair and use. Those in near ruins were not considered unless actually occupied. In describing the houses as to size and condition, no elaborate criteria were used. Determinations were made from general observations only.[1]

TABLE 6. *Size and condition of houses in the area.*

Size	Condition							
	Good		Fair		Poor		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Large	21	5.2	13	3.2	5	1.3	39	9.7
Adequate	47	11.7	103	25.6	51	12.6	201	49.9
Small	22	5.4	61	15.1	80	19.9	163	40.4
	90	22.3	177	43.9	136	33.8	403	100

[1] An adequate house in this report represents one that is sufficient for the modest needs of a small family. Small represents a house somewhat below the requirements of the family with children. Large houses were full two-story houses and larger than most families of modest needs would require. The condition was described as poor if the general appearance from the outside indicated foundations and sills were bad or the roof in poor repair. Fair condition indicated straight roof and foundation lines but repairs plainly needed. Good condition indicated that the house was fully protected from deterioration. The state of the house as to interior or as to the existence or condition of plumbing, heating, etc., was not considered. Thus, many houses classed as in good condition would not meet the usual requirements for a family under city standards.

Of the total number of houses 10 per cent were classified as large, 50 per cent as adequate, and 40 per cent as small. In condition 22 per cent were classed as good, 44 per cent as fair, and 34 per cent as poor. Approximately one-fifth of the houses were poor and small.

Seventy-nine were used as summer residences, and all but seven of these were in good or fair condition. Thirty-five were vacant, and 19 of these were in poor condition.

Of the 289 occupied places, 110 or 38 per cent were in poor condition and were depreciating rapidly. Many of the 125 classed as in fair condition will need attention within a brief time if they are to be preserved.

In general the barns were in poor condition, and with a few exceptions a return to an aggressive agriculture would require new outbuildings.

Many locations continue to be occupied because of the shelter afforded by the old farm house rather than for any particular use of land. The size and condition of the houses are important, therefore, in considering the future of the area. The income of the present occupants is so low and the prospects for future income so insecure that it is doubtful whether replacements can be made from income originating within the area. If there is not sufficient interest or income to repair roofs and foundations now, it is unlikely that new structures can be built by local people later.

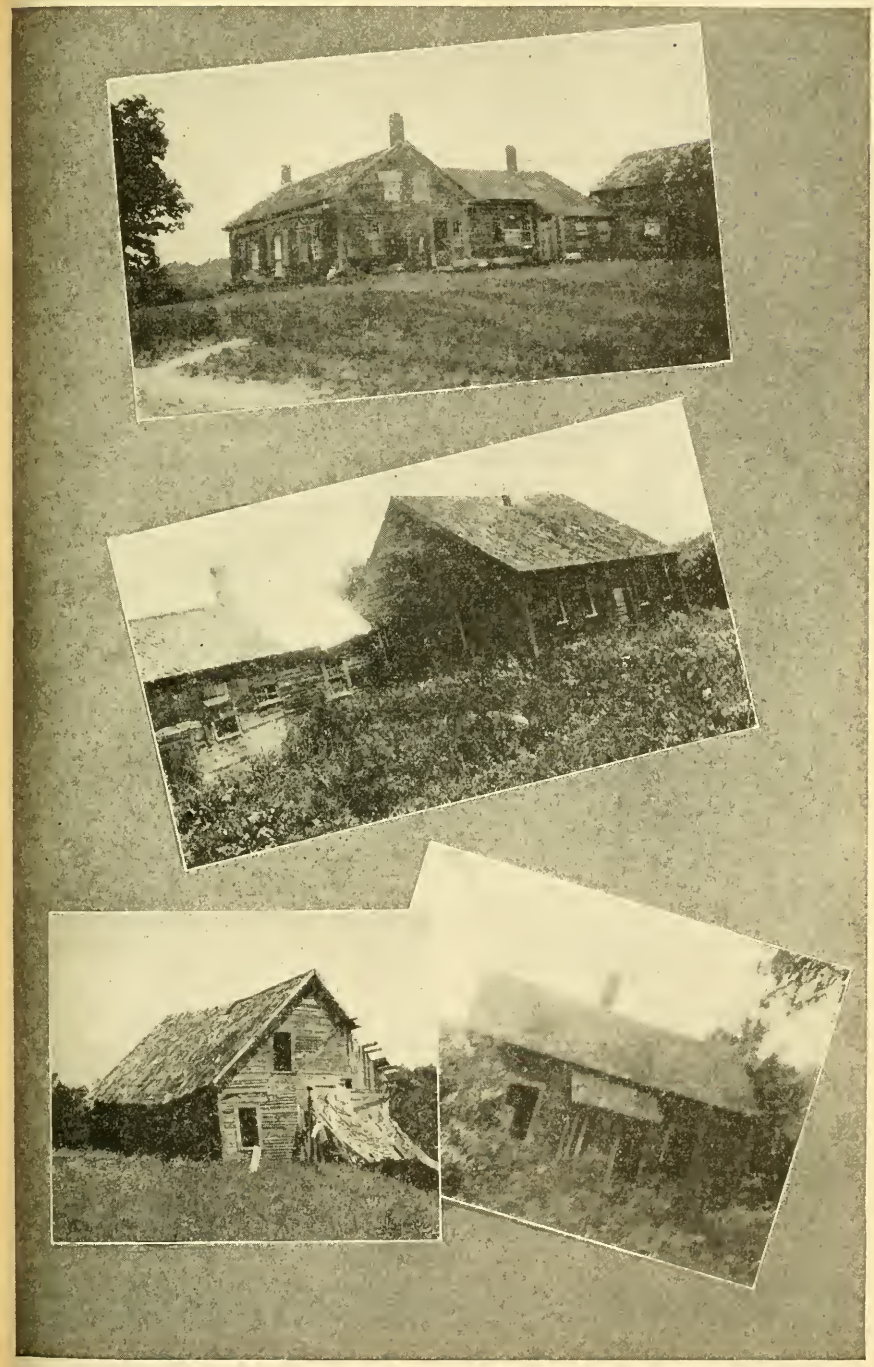
TABLE 7. *Condition of houses in the area grouped as to use.*

Use	Condition							
	Good		Fair		Poor		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Occupied	54	13.4	125	31.0	110	27.3	289	71.7
Summer	33	8.2	39	9.7	7	1.7	79	19.6
Vacant	3	.7	13	3.2	19	4.8	35	8.7
	90	22.3	177	43.9	136	33.8	403	100.

On good locations a few places now in poor repair may be taken over by summer residents, in which case the present house may be restored or a new one built. But in general it is to be expected that when people in a region have very meager incomes and very little prospect of income in the future, the trend will be toward depreciation. Buildings with poor roofs and delapidated foundations soon decay. In addition, there are often losses by fire. With a third of the houses now in poor condition, the abandonment of locations can be expected to continue. This suggests continued decline in agriculture and in population.

PERSONNEL, INCOME, AND CONTENT OF LIVING

This study of land utilization is primarily directed toward the adjustment of people to the land resources. Therefore, it is important to consider the present personnel in the area.



Buildings not repaired soon depreciate and decay. Buildings lost are seldom replaced in this area. The house in the middle picture was occupied for a few weeks in 1932.

Population

A population of 961 is estimated as of May 1, 1934. This is about three individuals or one family per square mile and represents a low population density. Even though the total population in terms of the State or of a city is very small, the adjustment of people to the land resources, the development of those resources, and the relation of the resulting returns to the content of living of the population are extremely important.

Personnel data were available for 252 of the 289 occupied places.[1] On these locations, 429 of the 877 population were operators and the wives of operators, 42 were adult relatives or other adults, 103 were older or mature children not in school, 42 were in high school, 167 were in grammar school, and 98 were of pre-school age. In addition, 172 mature children were living elsewhere.

The number of children of pre-school and grammar school ages suggests that approximately 20 young people are made available for places in economic society each year from families in the area. While this number may be sufficient for the continuance of occupancy of the area, it is thought that over half of the young people will find their places elsewhere. About 60 per cent of the older children out of school have migrated to other regions. The future trend of population as in the last decade will depend to a considerable extent on migration to the area. At present there is little in the economic situation either to hold the native young people or to draw others; nevertheless, many families may seek homes in the community, attracted by low site values and promise of security.

TABLE 8. *Cash income of operators arranged in three age groups (includes 242 of the 289 places).*

Age group	No. of farms	Total gross income (dollars)	Sales of agricultural products (dollars)	Sales of forestry products (dollars)	Outside labor, etc. (dollars)	Gifts, pensions, etc. (dollars)
Total		52,881	14,712	2,674	31,489	4,006
40 years or less	73					
Average		724	201	37	431	55
Total		90,880	41,091	9,242	30,110	10,437
41 to 60 years	106					
Average		857	388	87	284	98
Total		39,253	17,736	3,681	8,501	9,335
Over 60 years	63					
Average		623	282	58	135	148

Age of Operators

Approximately 30 per cent of the operators were 40 years or less in age, but these accounted for only 22 per cent of the gross sales of agri-

[1] Detailed records were not secured from 37 farms. For the most part these were isolated families who could not be found at home, had moved away before field work was completed, or were reluctant to give details. The population of the 37 places is estimated at 84 from personal interviews with local people.

cultural products. (Table 8) Those in the 41 to 60 age group made up 45 per cent of the number and accounted for 53 per cent of the sales of agricultural products. The operators over 60 made up 25 per cent of the number and were responsible for 25 per cent of the sales. On the whole the younger men were doing less farming and relying more on outside work for their income. Those 40 or less in age averaged $431 from outside work, while those over 60 averaged only $135.

Several of the older men had continued to carry their herds and to maintain their tillage fields and, thus, had more production than many younger men who were handicapped by lack of good land, equipment, stock, and experience.

Family Status

Thirty-four of the places were occupied by men living alone and six by women living alone. In all but a few instances these 40 individuals were over 50 years of age. In addition, 14 places were occupied by widows with children, 16 by men and their children, and 13 by men and other adults. Thus, a total of 83 or about one-third of the places were occupied by remnants of families.

Of the 169 places occupied by man and wife, 38 had no children, 17 had no children at home, and 114 had children at home. These data suggest that many of the farms have become the haven for those who are not inclined or cannot meet the requirements of either an aggressive agriculture or a commercial urban life. Perhaps many could not find a more satisfactory alternative solution to their problems than to remain in the better parts of the area.

TABLE 9. *Number of years operators have lived on the present farm, grouped by sales of agricultural products.*

Years	Sales of agricultural products					
	0-$50 Group I (Operators)	$51-$100 Group II (Operators)	$101-$500 Group III (Operators)	$501-$1000 Group IV (Operators)	Over $1000 Group V (Operators)	Total (Operators)
0-10	66	13	22	13	4	118
11-20	22	4	16	7	5	54
21-30	6	2	8	5	4	25
31-40	9	0	1	4	2	16
Over 40	9	5	10	5	4	33
Tenure not known	6					6
	118	24	57	34	19	252

Years on the Present Farms

One hundred and eighteen of the operators had lived on their present farms ten years or less. (Table 9) Over a third of these had migrated to the farm within two years and were probably in most part depression victims; they were handicapped by poor soil, lack of equip-

ment and skill in producing even for their own use. A few had become organized to provide a considerable part of their food supplies from the farm, but many of the locations selected by new families had declined to such an extent that a garden required considerable expense in fertilizer and the total production of hay was insufficient to maintain one cow. Only 17 of the 118 who had moved to the farm in the last decade had over $500 gross sales of agricultural products, and only four had sales over $1,000.

Fifty-four operators had lived on their farms from 11 to 20 years, and 12 of these had gross sales in excess of $500. Thirty-three had lived on the farm over 40 years, and nine of these had gross sales of agricultural products in excess of $500.

Fifteen of the 19 operators with gross sales over $1,000 had been on the same farm over ten years. The newer settlers apparently have depended very little on farming for their living, and on the whole have not checked the trend toward decline in resources on the farms they have occupied.

Training

The operators represent a varied background of training and experience. Over half of those under 60 indicated experience other than common labor, lumbering, or farming. Many of the men had put in active service in trade or business for a period of years and had migrated to the farm on account of health, inheritance of property, or desire to leave the city or factory.

Twenty-eight had done mechanical work such as carpentering, steamfitting, garage work, and painting; eight had done office work; three had been sailors or shipyard workers; 13 worked in factories. Such special trades as chef, acrobat, sausage-maker, riding-master, motorman, and station agent were represented.

There is no information as to how successful these men were in these fields, but it is significant that this great variety of experience is available in the area and might be diverted into productive channels. This wide variety of experience should be adaptable to a wide range of possibilities.

Of the male operators under 60, about 70 per cent were in good, 23 per cent in fair, and seven per cent in poor health. In addition to the operators, there were 74 older male children at home. It was estimated that 180 able-bodied men under 60 were available for productive work and that 120 of these would be able to give at least 100 days to productive work such as forestry.

Income

The income and living of the people bring still more light to the problem. (Table 10) First the gross cash receipts for sale of products and for labor off the farm averaged $650 for the 252 farms. The farm operating expenses[1] averaged $417 leaving a net of $233 as income not including deductions for either actual interest payments or interest on money invested. This income was supplemented by an aver-

[1] Operating expenses included cash expense for labor, grain, feed, fertilizer, repairs, taxes, and farm auto expense. Interest on investment or on debt was not included.

TABLE 10. *Source of income by groups according to gross sales of agricultural products.*

	Farms grouped by gross sales of agricultural products					
	0-$50 Group I (dollars)	$51-$100 Group II (dollars)	$101-$500 Group III (dollars)	$501-$1000 Group IV (dollars)	Over $1000 Group V (dollars)	Total All groups (dollars)
Earned receipts						
Sales of agricultural products	9.82	78.11	237.05	684.18	1,769.35	291.37
Sales of forestry products	20.18	98.38	68.07	69.94	343.18	69.53
Income from outside work	285.52	274.40	311.88	281.19	279.15	289.36
Total cash earned receipts	315.52	450.89	617.00	1,035.31	2,391.68	650.26
Total cash farm expense for grain, taxes, etc.	158.41	257.43	447.04	708.73	1,613.14	417.06
Net difference cash income and expense	157.11	193.46	169.96	326.58	778.54	233.20
Income from gifts, pensions, relief, interest, etc.	83.84	61.58	100.26	96.62	110.53	89.17
Total net cash income for living and payment of interest	240.95	255.04	270.22	423.20	889.07	322.37
Value of living from farm	148.57	216.73	237.55	283.36	381.25	210.92
Net cash income and living from farm	389.52	471.77	507.77	706.56	1,270.32	533.29

age of $89 from gifts, pensions, interest, savings, and relief. On the average this would mean $322 cash per family for living, payment of interest, and former obligations.

When the farms were grouped into five classes according to gross sales of agricultural products, the data indicate that the groups with higher gross sales of agricultural products had a larger net income.

On the whole those doing little farming had very little cash for living expense. Not including the $84 from gifts, etc., the first group averaged only $157 cash or $13 a month for living. It is interesting to note that those doing the most farming consumed more home-grown products. On the whole the operators in Group 1 (less than $50 sales) had more time for home production and if they remain in the region should be aided in bringing their production of farm products for home consumption into line with requirements.

But even in this grouping the actual situation is hidden by averages. A study of Fig. 3 indicates the net cash earned income on the 252 individual farms. One-fourth had no earned income and one-fourth had from $1 to $200. Probably over half the families were on very meager

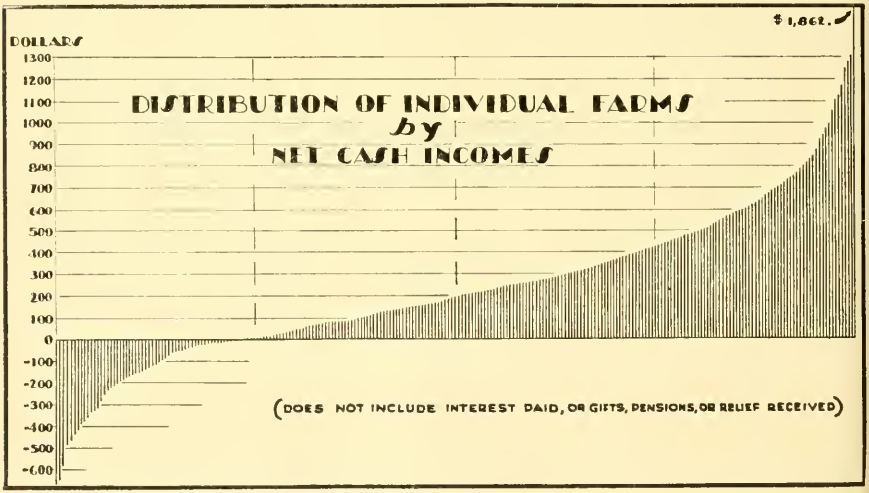


FIG. 3. The earned income of half the operators was very low. Roughly, one-fourth had no earned income, one-fourth had less than $200, one-fourth between $200 and $400, and the other fourth over $400. Each line represents one farm.

living even after supplementing with gifts, pensions, relief, and other income from outside the area. Only about one-fifth of the families had an earned cash income of over $500.

However, the low earned cash income exaggerates the situation to some extent for a few men have retired or are in poor health and some of the families have learned to make small amounts of cash go a long way. One woman told in some detail how she managed to provide for a large family with little cash. She purchased mostly such raw materials as flour, lard, sugar, etc. She was a real expert in getting through a depression because as she stated in her own words, she had always been in the trough of one.

The supplies from the farm averaged $211 per farm and consisted largely of milk, eggs, potatoes, garden, and fuel wood. A few reported berries and a larger number reported one or more barrels of apples from old partly abandoned apple trees. While most operators reported a garden it was evident that the possibilities of adding to the quality of living through a wide variety of vegetables and small fruits in a well-planned garden was not fully employed.

Some conception of the value of food supplies taken by individual families is illustrated in Table 11. Family A produce very little for themselves and Family B produce milk, eggs, poultry, and garden crops in abundance for themselves.

TABLE 11. *Farm supplies consumed on three selected farms.*

	Family A		Family B		Family C	
Milk	None		1,500 qts.	$60.00	1,100 qts.	$44.00
Eggs	None		100 doz.	25.00	40 doz.	10.00
Potatoes	18 bu.	$18.00	20 bu.	20.00	15 bu.	15.00
Garden		25.00		35.00		30.00
Fuel	10 cds.	50.00	12 cds.	60.00	7 cds.	35.00
Poultry			36	36.00	18	18.00
Other meat			800 lbs.	74.00		
Fruit			2 bbls.	4.00		
Maple sirup			3 gallons	4.50		
Total		$93.00		$318.50		$152.00

Cash Living Expenditures

The expenditure (Table 12) for living indicates that on the average the families use about 70 per cent of their personal expenditures for food. In Group 1 (less than $50 sales of agricultural products) the proportion for food was 75 per cent. This high proportion of expense for food is the usual situation wherever content of living is low. It suggests only partial utilization of the possibilities of a self-sufficing agriculture as well as a very meager income.

It is evident also that with only small supplies of fruit available from the farm very limited amounts are purchased. Thus, the lack of cash for living may in some instances result in low dietary standards. In this connection on 29 of the 252 farms were families with children of pre-school or grammar school ages and no cow. Probably most of these cases had no regular supply of milk.

Expenditures for items other than food averaged $112. The item for amusement of $2.00 per family seems extremely low but most families reported that they did not attend movies. In fact movies are not very accessible to the population.

In content of living, the families represent a population with extremes. Certain families have a very wholesome and adequate content of living but a large number were living under depressed conditions.

TABLE 12. *Average estimated cash living expenses on 242 farms by groups according to sales of agricultural products.*

	Farms grouped by sale of agricultural products					
	All groups	0-$50 Group I	$51-100 Group II	$101-500 Group III	$501-1000 Group IV	Over $1000 Group V
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Meat	48.28	44.48	36.33	39.42	59.88	90.47
Milk and butter	17.40	21.11	6.71	7.74	19.73	35.95
Poultry	.28	.25	.42	.....	.94	.....
Eggs	4.54	7.29	2.25	2.50	2.24	2.79
Fruit	9.23	7.79	5.50	11.17	11.47	11.84
Other food	182.01	170.36	151.91	167.00	224.24	254.00
Total food expense	261.74	251.28	203.12	227.83	318.50	395.05
Clothing	44.80	37.05	41.74	48.53	52.33	66.31
Health	34.00	27.00	24.18	56.37	35.79	14.21
Furniture	3.59	1.62	.27	1.46	16.00	2.89
Amusement	1.95	1.53	3.27	1.45	3.12	2.11
Education	2.70	2.59	6.86	.32	3.24	4.53
Miscellaneous	12.30	8.48	8.14	18.85	10.55	21.58
Electricity	1.77	.23	1.18	1.29	.....	15.26
Telephone	4.67	1.81	5.50	4.52	7.70	14.47
Fuel	6.17	4.54	.36	8.41	1.42	23.42
Total other expense	111.95	84.85	91.50	141.20	130.15	164.78
Total expense	373.69	336.13	294.62	369.03	448.65	559.83

PROBLEMS IN PUBLIC FINANCE

The problems of public finance resulting from scattered isolated settlement are difficult to segregate in definite quantitative form. Back areas in New Hampshire are usually portions of towns and the situation and the effect are somewhat obscured by the general condition of the town as a whole. If the area is the back portion of a wealthy town the situation is of minor importance when incorporated with the total financial load. If the area is entirely rural but the occupied places low in value and representing only a minor part of the total tax base the situation may be obscured by the large non-resident tax revenue from timber holdings.

A balance sheet approach, even if all the data were available, is defective except as a rough guide or measure. It is difficult if not impossible to allocate accurately the cost of public services to any group of valuations. However, the only approach to the problem seems to be a study of the additional costs due to occupation of particular locations. If the entire area studied were one political unit, the case would be more definite, but since this study includes portions of 13 towns and only one entire town, the data made available represent an area crossing present minor civil divisions.

In this area the occupied places account for 14.4 per cent and summer places 15.3 per cent of the total valuations. (Table 2) The wild lands and power line make up a large part of the total tax base and

this type of property under present conditions is to a considerable extent not closely related to local town activities and not very demanding in the public services required.

Roads

There is some question as to the highway services economically justified for a forest area. This will depend on the intensity of management but with State highways now available and under present conditions of the forest cover and management practices, lateral roads could largely be part of the timber management problem servicing only such roads as are essential for operations in any one year. Roads for fire protection and for summer residents are essential, but for the most part good summer lateral roads are adequate. Where summer occupation has possibilities, good summer roads may stimulate and poor impassable roads discourage development.

There is an opportunity in towns to direct the location of summer residents in such a way as to encourage the use of land for recreational development and at the same time restrict or discourage certain locations where one or more summer places may result in large social costs. Many of the summer residents who seek places in such areas as this prefer seclusion and require only a modest lateral road.

One must recognize that present summer occupation is not necessarily the best criterion in making decisions as to roads. Certain small areas may develop summer resources and these possibilities should not be ignored.

On the other hand a large part of this area is not especially attractive to city people. Many of the desirable locations are not far from State highways and their development would require little additional public cost. Marked expansion of the summer occupation would soon require the building of new houses, and the tendency would be the development of new and more accessible sites.

While roads are needed for these other purposes, the occupied places representing 14.4 per cent of the valuations are responsible for the greater part of the highway and other governmental services.

The 289 year-round occupied places are responsible for a tax revenue of $12,000 and a large portion of this will be required in snow removal, on the 200 miles of roads, if no adjustments are made.[1]

In the area as a whole the valuations per mile of road averaged $1,718 for year-round occupied places, $1,820 for summer and recreation, and $2,500 and $5,382 in power lines and wild lands. Values in occupied and in summer places are concentrated in certain areas but widely scattered in other areas. (Plate 6, p. 38.) For example, on 3½ miles of the main road from Canaan to Rumney and in Canaan are 15 occupied places totaling $27,550 or nearly $8,000 a mile of road. On the other hand on 5.6 miles of road in North Canaan and southwestern Dorchester, the two occupied places have a total valuation of $1,210 or $216 per mile of road. On another road of about six miles through Alexandria four corners, there is only an average valuation of $400 per mile of road

[1] Total road mileage in the area is estimated at 218 miles but some of this is seldom used. Assessed valuations are based on real values.

in both summer and occupied places. Eight miles of road in East Hanover has a total valuation in occupied and summer places of $8,856 or $1,107 per mile of road. Three miles of this road may have some future value for through traffic but in this case the remaining five miles of road would have a total of only $850 per mile of road.

On eight miles of the road from the Day farm in Lyme to the North Dorchester road there were two summer developments at the time of this survey, but no year-round occupied places. This road has been maintained as a summer road giving access to the camps and timber. In the interest of general State summer development the road might have been improved somewhat but since it was used only in the summer months the snow removal and year-round maintenance were avoided. Since the survey a few scattered families have occupied shacks near the Lyme-Dorchester line and this may require a change in the status of the road and a consequently greater cost.

On 10 miles of road in northeast Grafton and southern Orange there is a total of $2,100 in summer valuation and $7,300 in occupied places. Probably only half of this road mileage is maintained for year-round service. For the part maintained there would be only $1,500 in occupied places per mile of road.

On five miles of highland road in Alexandria there were $1,360 in summer valuations and $1,060 in occupied places per mile of road. However, with the development of both winter and summer recreational activities it will be important from a broad State point of view to maintain about three miles of this road. Since this part of the road should be kept up to give access to ski trails, the scattered places along the road may be assets in further summer and winter developments. Good roads serve to direct new developments. A road of this sort may have more value to the broader area than to the town and the State should carry a large part of the required cost.

Within recent years two new State-aid highways have been constructed through the area and these will be maintained by the State for through traffic. Fortunately these roads touch considerable valuation. The eleven miles of Canaan-Rumney State road within the area is tributary to approximately $4,000 value of occupied places and $1,100 in summer places per mile of road. The nine miles of the Wentworth-Orford road within the area are tributary to $3,600 in summer and $2,100 in occupied places per mile of road.

Since these roads will be maintained by the State the people in the area can well consider readjusting themselves to this permanent public service. By careful planning by local people the better locations along these State roads can be reoccupied by families who now live on the more isolated places. Even along these main roads the occupancy of certain barren areas should be discouraged, particularly if special school transportation costs are involved.

The construction of these State roads gives the adjoining area a preferred position and places the isolated locations at still greater comparative disadvantage. Thus road building may be a directional measure, stimulating settlement in one place and discouraging living in

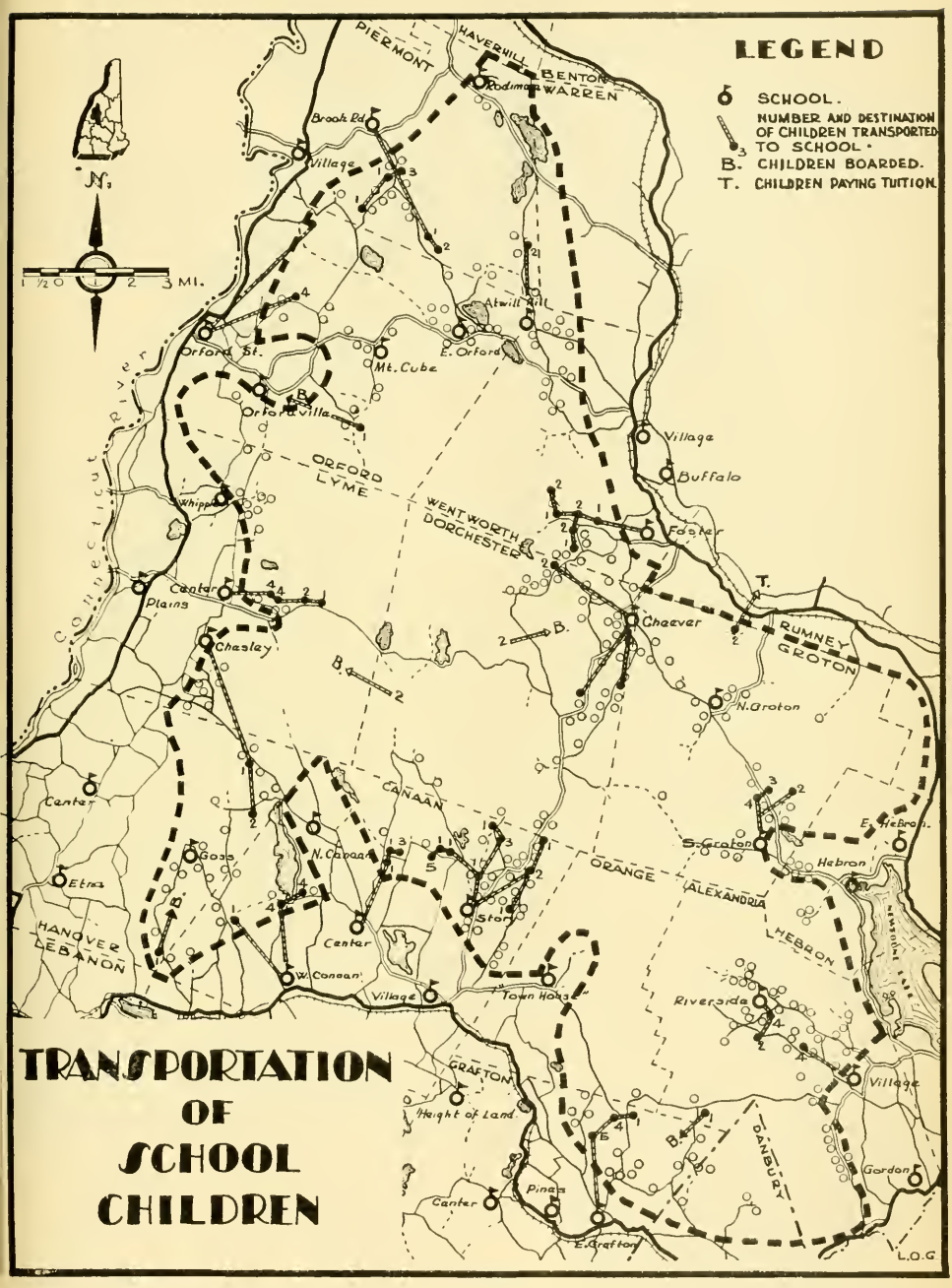


FIG. 4. The public transportation of school children is shown by heavy lines. Much of the conveying is from isolated interior farms to schools outside the area. Total transportation costs amounted to $7,137.

another. In a dormant rural area, however, this trend is slow and the loss in human values is too precious for reliance on this measure alone.

Schools

Fundamentally, the location of families and not the existence of children in isolated places results in costly and difficult school situations. The children are not responsible and the educational facilities should be made available to them without reference to extra cost due to their location. But on the other hand if society in general is to contribute largely to the education of these children it may well study and perhaps question the location of certain of the families.

Every habitable place in the rural area is potentially a location for school children and places with and without children should be given equal weight in considering a permanent program. The whole problem should be viewed broadly. The best interest of society and the well-being of the individual families should be considered.

Fortunately we have accepted a policy of educational opportunity for every boy and girl. Thus the problem of school costs in the sparsely populated areas is not one of relating education to local assets or of curtailing educational opportunities but rather one of making better educational facilities available to all children as effectively and as economically as possible.

Within the area are a number of locations which potentially represent high costs in educational services. (Fig. 4) Families with children of school age occupied some of these at the time of the survey.

Nine schools were open in the area.[1] One hundred and ten of the 167 children in the area attending school were transported, or boarded in lieu of transportation, at an estimated cost of $6,093 for transportation[2] and $1,044 for board, a total of $7,137. All but forty of the transported children attended schools outside the area.

One family living on a place assessed for $300 and selling no farm products was responsible for a special transportation cost of $144. Two families occupying places assessed at $1,200 and $2,500 were responsible for an extra expense[3] of $720. Such instances as these tend to exaggerate the average situation because all occupied places are not considered and transportation costs vary from year to year. These instances do indicate the possibilities of the public purchasing a farm provided this results in the location of the family near present school facilities. This is especially true where vacant places in these better locations exist.

While road and school services to scattered isolated families have been considered separately for illustration, the cost of all public and social services should be considered in decisions as to a particular area. Thus on one road of five miles two locations represent a tax revenue of

[1] At an estimated rate of $1,000 per school the total cost of these schools would be $9,000.

[2] The cost of transportation was estimated by examining the transportation costs for each town.

[3] Tuition paid to other towns is not included because while this is an expense to one town it is a receipt in the other town. Only costs that are additional to the normal costs are considered here.

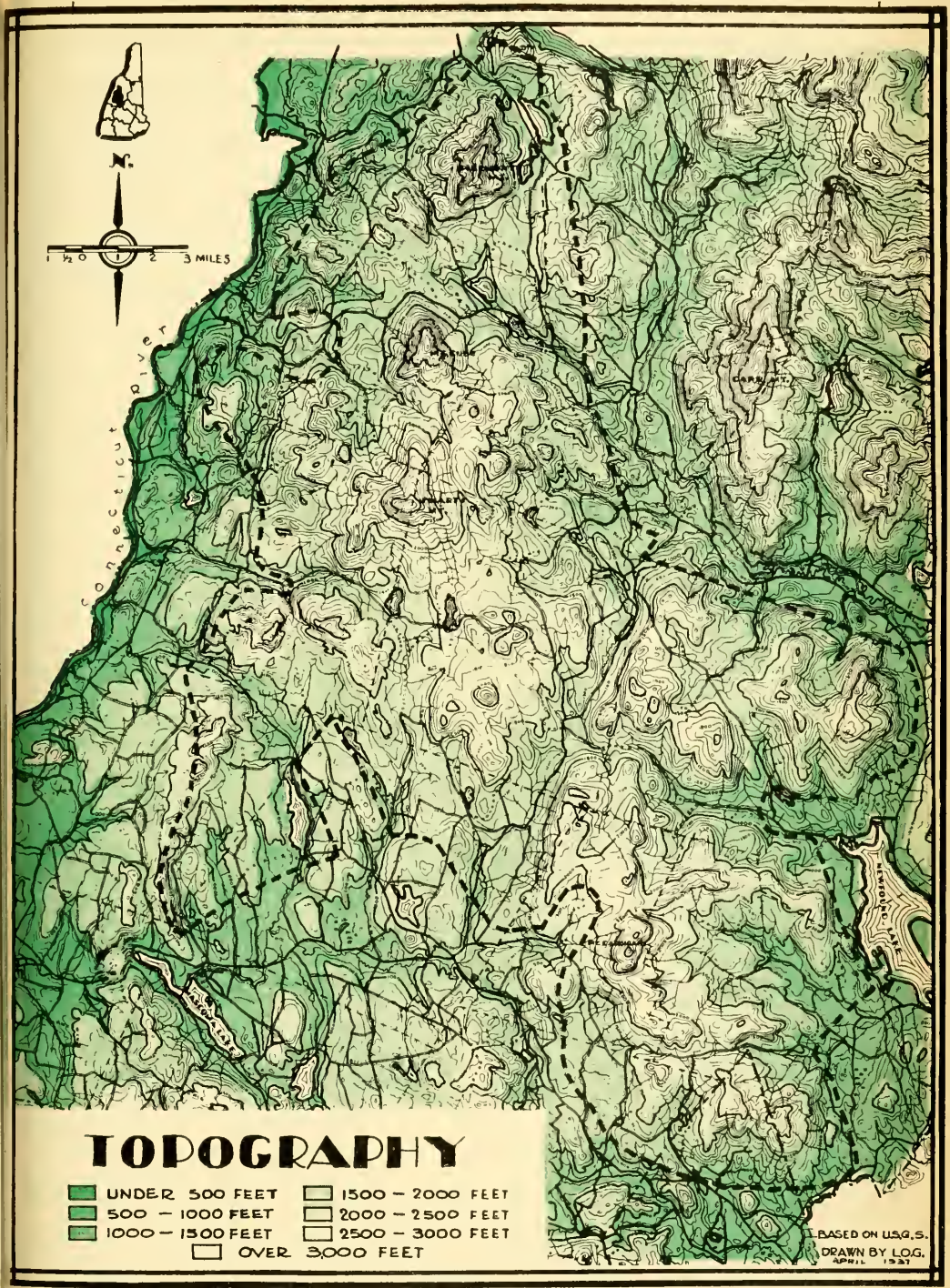


PLATE 1. The topography of the area is rough and bold, with forty-five per cent over 1,500 ft. elevation.

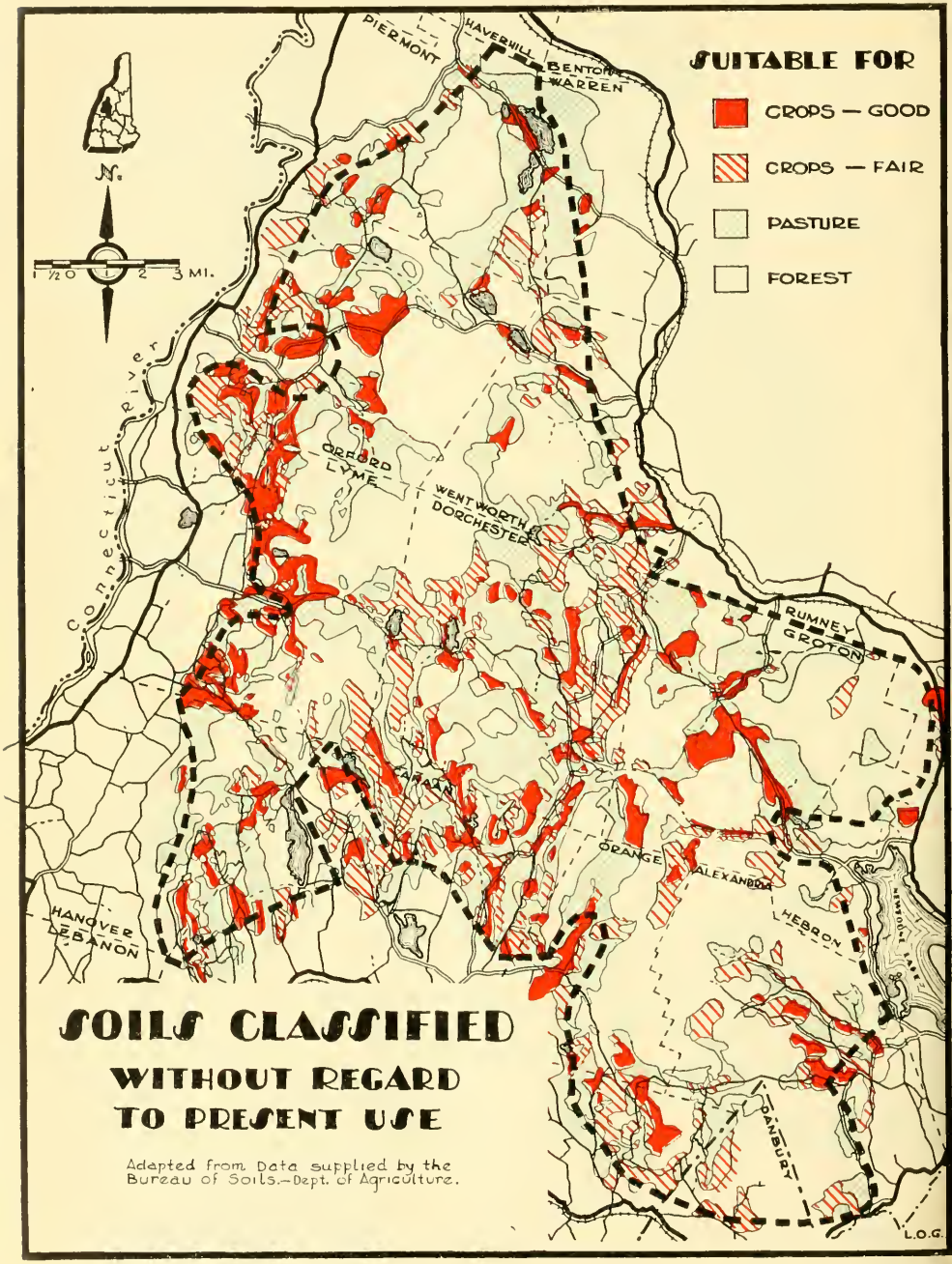


PLATE 2. The soil area suitable for crop production is limited. Much of the land classified as good for crops is covered with timber or has deteriorated in fertility. Most of the land rated as suitable for pasture is now in brush and actually has little pasturage.

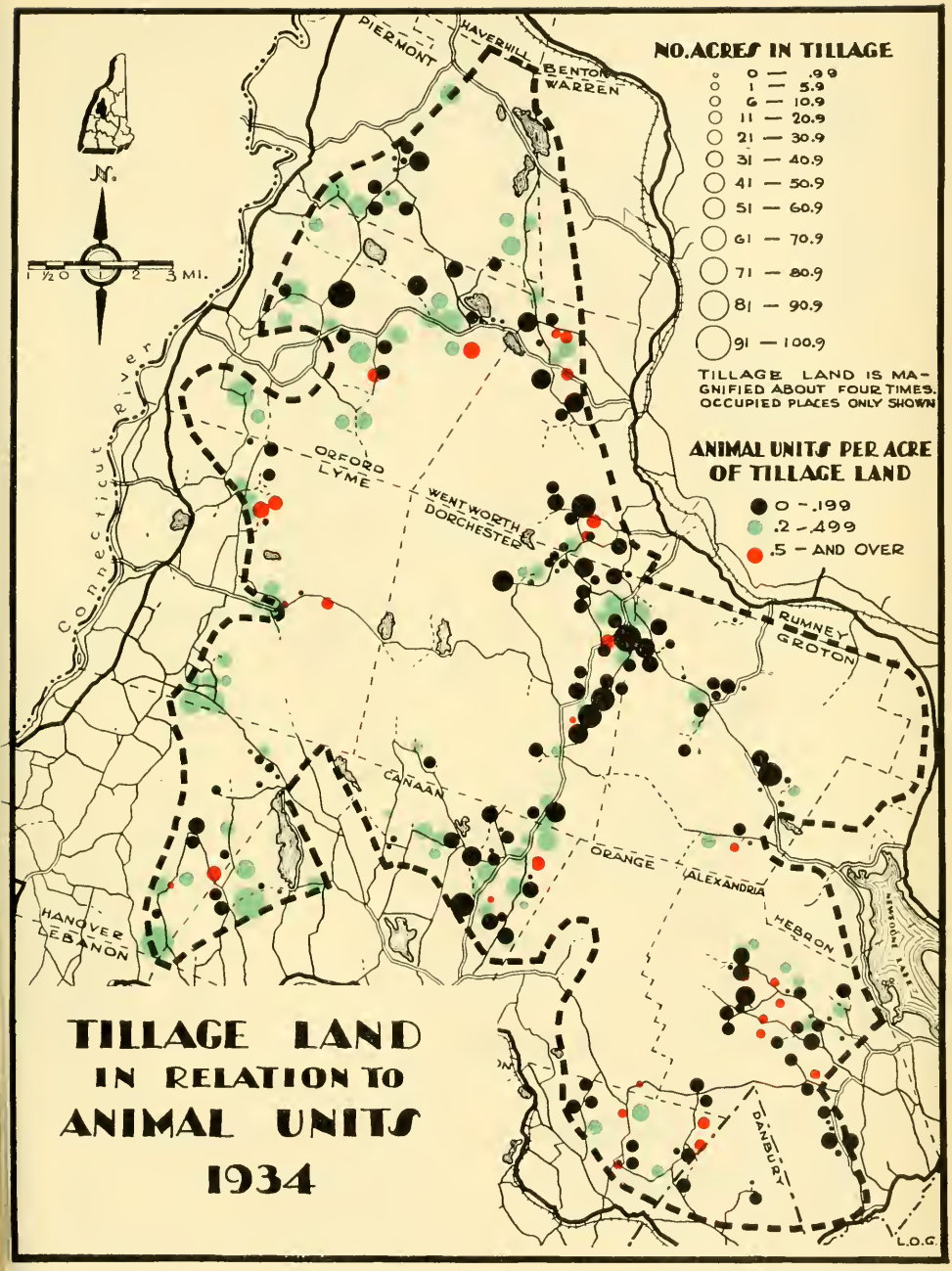


PLATE 3. Tillage land in New Hampshire tends to depreciate in yielding capacity if not associated with livestock. The black circles represent land that has less than .2 of an animal unit per tillage acre, and if present management persists will be in brush by 1955.

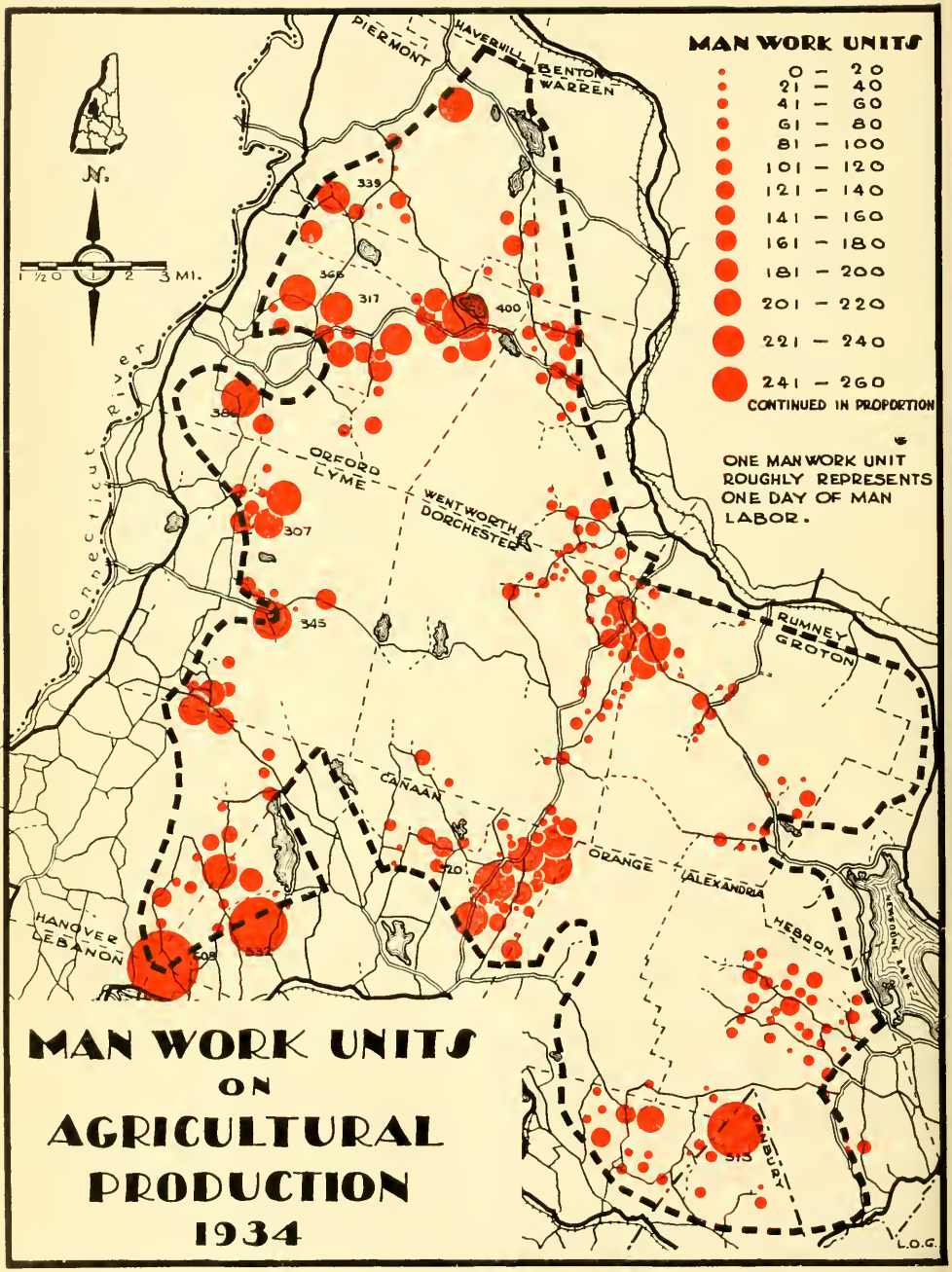


PLATE 4. The relative size of each farm's organization is shown above by the size of the circle. In certain parts of the area, the farms have less than 100 man work units per farm.

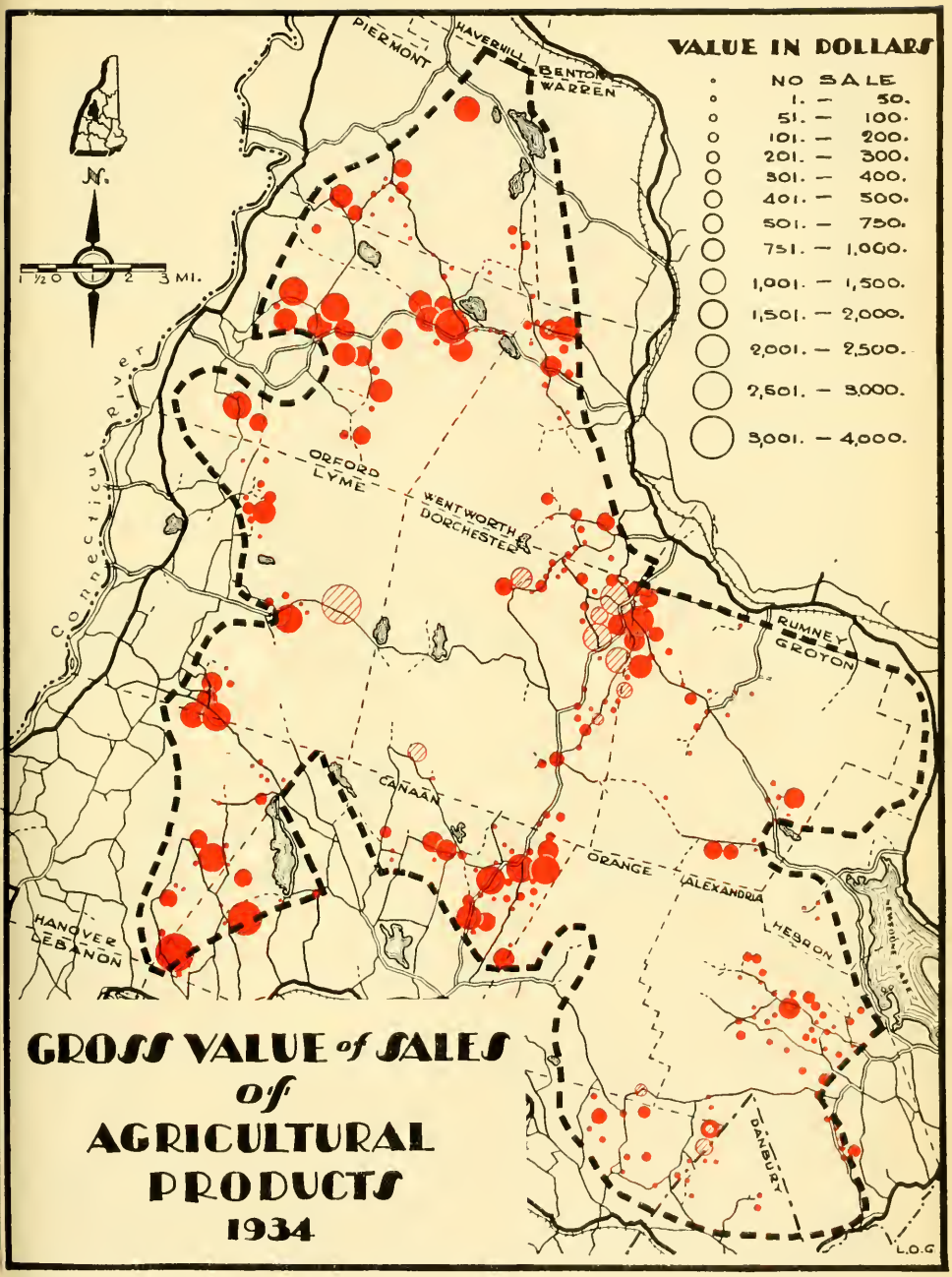


PLATE 5. Small sales of agricultural products characterize the farms in the eastern part of the area and the more isolated locations in the western part. The shaded circles represent income from poultry, an industry not closely associated with the use of land.

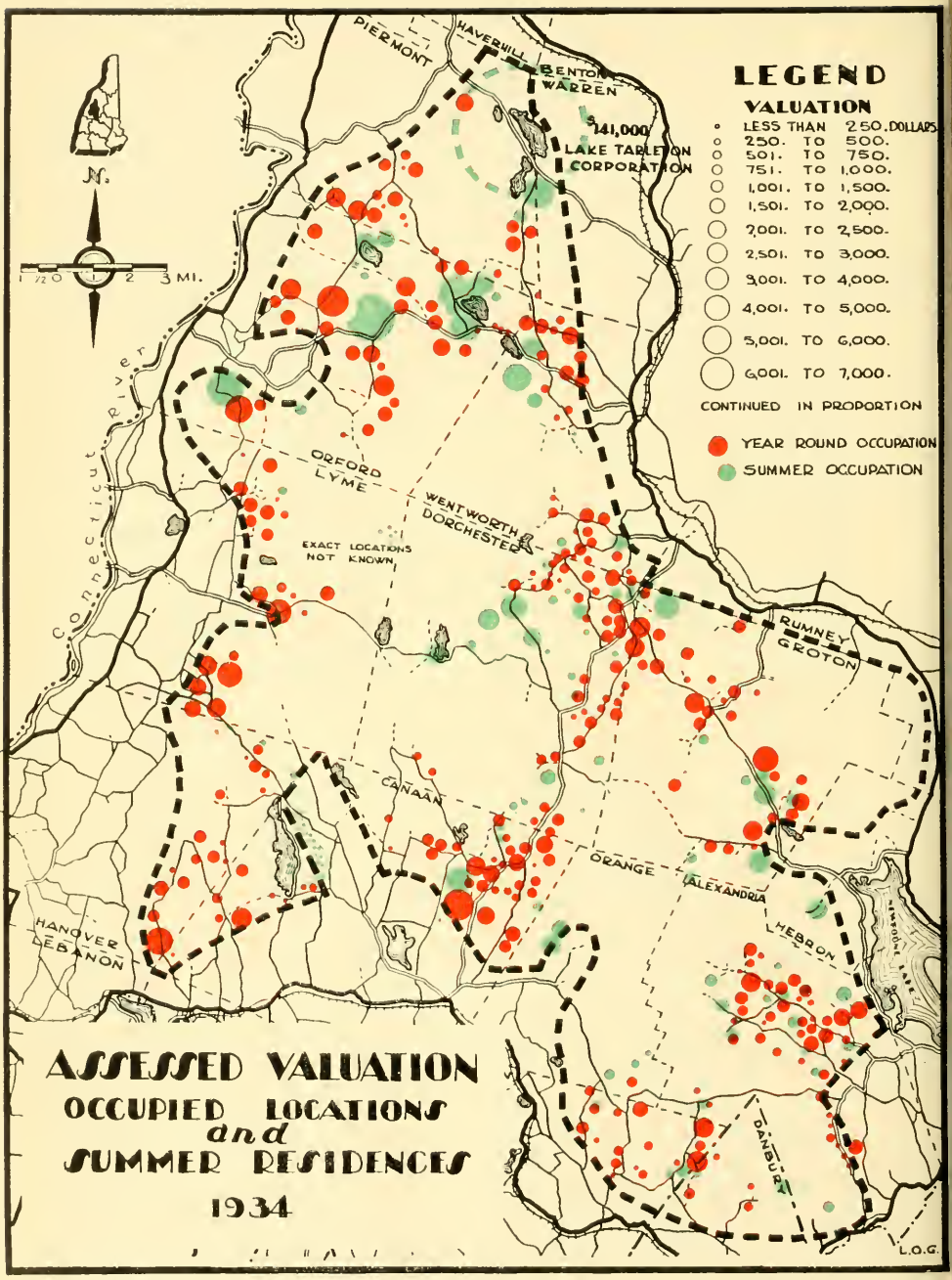


PLATE 6. Isolated farms require considerable road mileage. Is it socially profitable to build a $20,000 road to service a $1,000 farm?

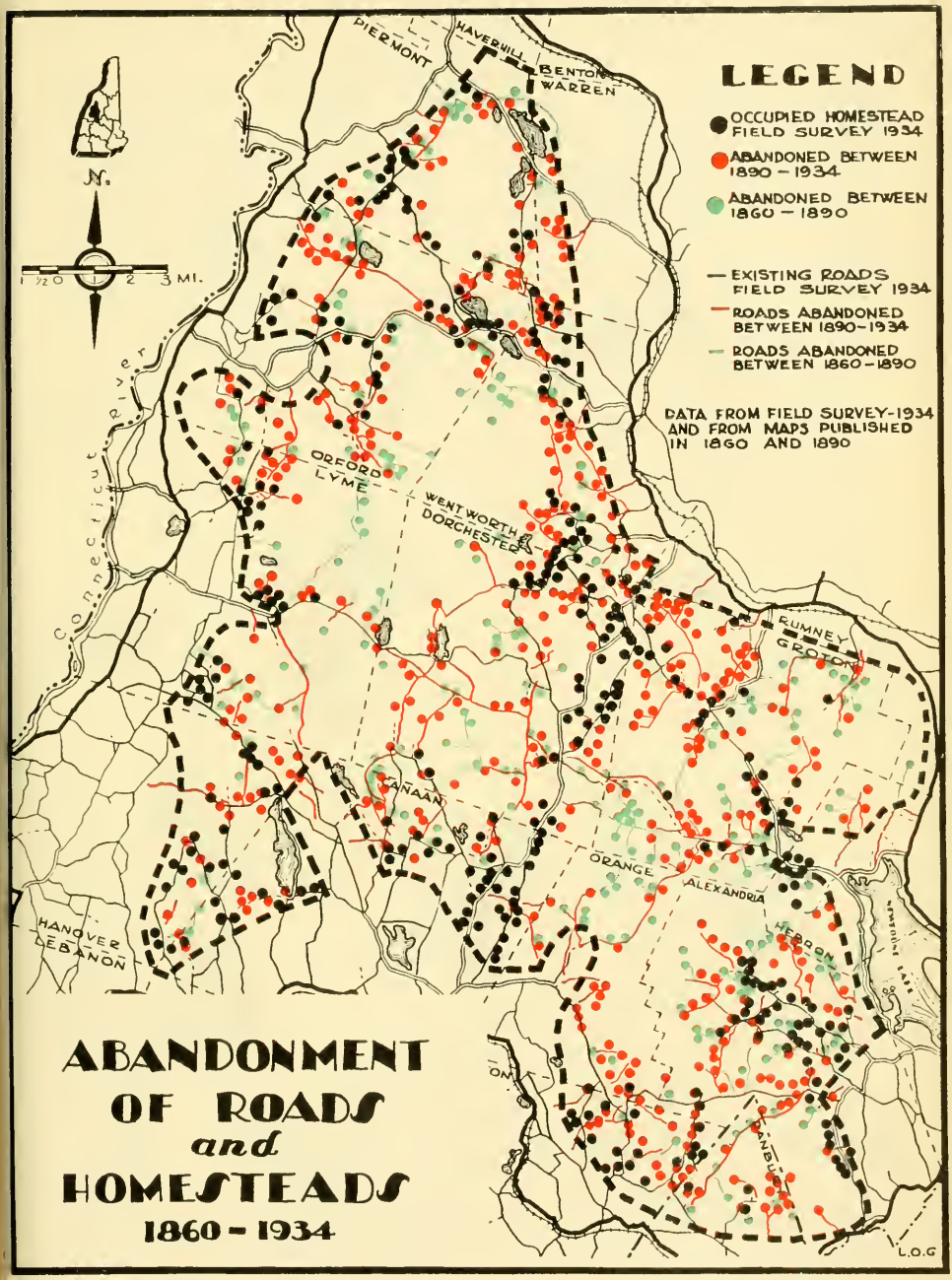


PLATE 7. In 1860 the area was well pierced by inhabited roads, many of which have now completely disappeared.

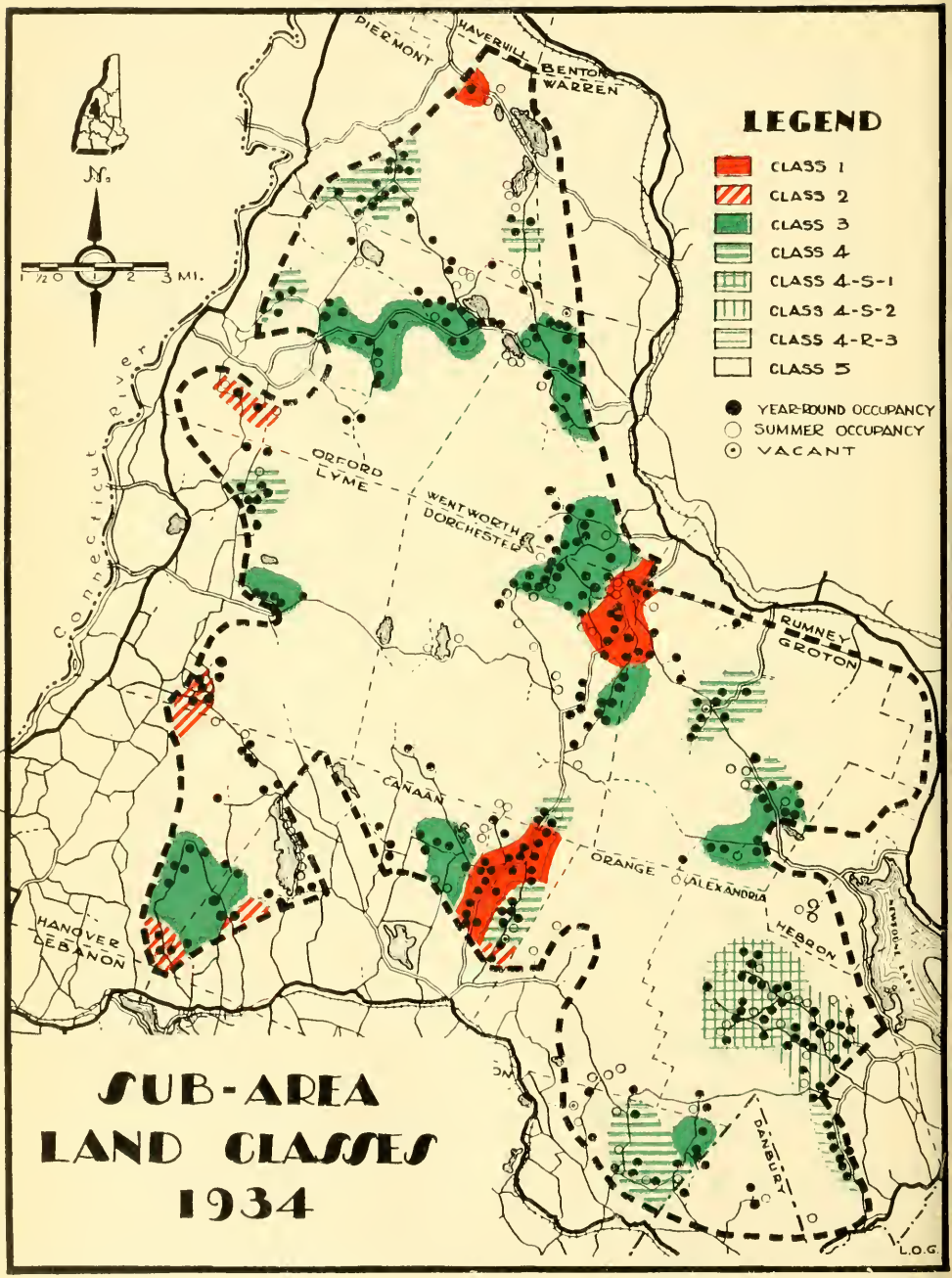


PLATE 8. The land area is here roughly divided into sub-areas by priority of opportunity, including costs of social and public services. The unshaded portion on the map has half the road mileage, is responsible for most of the school transportation, and yet its occupied places contribute little tax revenue.

$27.10. The extra costs due to families living in these locations are likely to average $300 per year, and even then the services will be below the standards which each family should enjoy. There is the additional social cost in obtaining or not obtaining medical service. The extra costs of public services in four to five years would be equal to the value of the places. Since such places are valued largely on the timber possibilities, there is no particular loss of resources if the locations are vacant. The people in such places have little to do with the development or maintenance of timber resources and usually are not farming.

It is evident that the values associated with occupancy of many parts of the area are not sufficient to carry the cost of the special public services demanded and required by that occupancy. Society in the large must carry in one form or another much of the resulting burden. This in itself is not to be condemned.. Perhaps society should carry certain burdens at least temporarily. The problem is one involving both the best interests of society as a whole and the well-being of the individuals. But we do need to face the issue frankly and realize that the occupancy of scattered homes results in costs greatly disproportionate to the value of the properties and the services to the individual.

If the people are to remain in all the present locations, they should have the advantage of good roads, better roads than now exist, and the snow should be removed to give access to friends, medical care, markets, school, and church.

We are tending toward a public policy of adequate highway services to every family in the State no matter where the individual families may be. This policy is not questioned here. Questions are raised as to how costly this may be; how these costs may be distributed; what the effect will be; whether adjustments can be made locally to reduce the costs.

It is somewhat futile to attempt to allocate present road costs to certain definite small areas and use this as a basis of determining the situation because the highway services demanded and really required have greatly changed in the last decade and we must think in terms of these increasing demands. The rural family needs and demands a good road for year-round auto travel. Thus, in all parts of the State and the highlands, in particular, the removal of snow and maintenance of roads for year-round auto traffic have brought new problems in public finance. In the highlands where roads are difficult and the population scattered, the cost of giving adequate road service is increasing with the need for transportation services. Looking toward the future we should recognize that the public finance problem in isolated places involves better and more costly roads and not merely present inadequate services.

Another view of this difficult problem of public finance can be gained by examining the situation of two towns, Dorchester and Groton. The former was included in the area and all but a small village in the latter. However, for this purpose the entire area in each town will be compared in both instances.

The New Hampshire town is a rather small political unit and much depends in public finance problems in back areas on just how town

lines cut across the areas.[1] If, for instance, an urban area is included in the town, political control and the emphasis of the town policy are likely to be in the village. Since the unit is small the attitude is usually one of good neighborly interest in servicing the isolated resident with roads and schools, but the town offices and town work are not under the direct control of the scattered rural residents.

However, if no urban center exists and if the town has declined in population and in agricultural activity to a point where only a few families remain, the isolated rural resident is in control and can direct the use of the tax revenues to a large extent. And this sometimes presents a problem. Those needing income from town sources may outnumber those who seek efficiency in local government. This situation

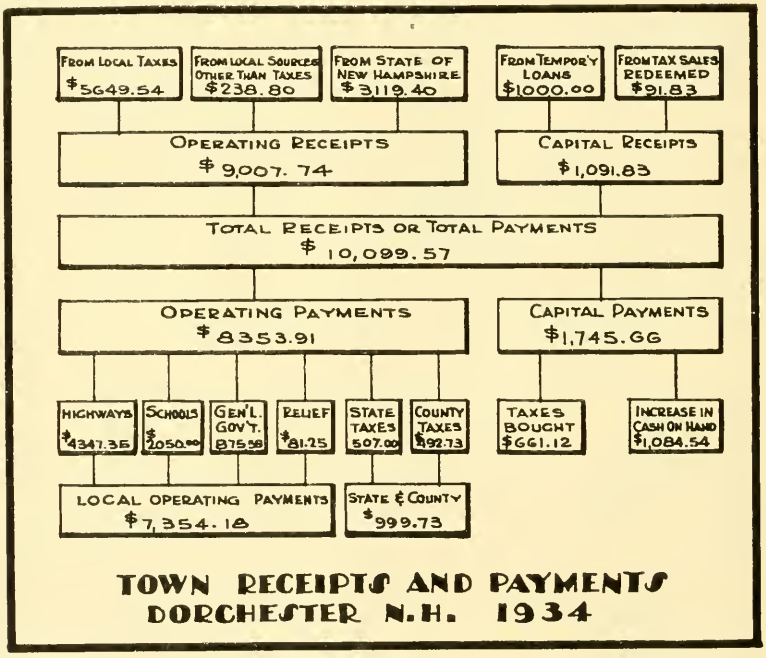

FROM LOCAL TAXES $5649.54
FROM LOCAL SOURCES OTHER THAN TAXES $238.80
FROM STATE OF NEW HAMPSHIRE $3119.40
FROM TEMPORY LOANS $1000.00
FROM TAX SALES REDEEMED $91.83
OPERATING RECEIPTS $ 9,007. 74
CAPITAL RECEIPTS $ 1,091.83
TOTAL RECEIPTS OR TOTAL PAYMENTS $ 10,099. 57
OPERATING PAYMENTS $ 8353.91
CAPITAL PAYMENTS $1,745.66
HIGHWAYS $4347.35
SCHOOLS $2050.00
GEN'L. GOV'T. 875.58
RELIEF $81.25
STATE TAXES 507.00
COUNTY TAXES $92.73
TAXES BOUGHT $661.12
INCREASE IN CASH ON HAND $1,084.54
LOCAL OPERATING PAYMENTS $7,354. 18
STATE & COUNTY $999.73
TOWN RECEIPTS AND PAYMENTS
DORCHESTER N.H. 1934

FIG. 5. The town of Dorchester used $7,354 in local operating expense. This included some road construction.

may have a very direct bearing on the use of land and especially on maintenance of obsolete services. It may hold people in a town and check further abandonment of places that are not socially productive.

Dorchester with a population of 115 and no distinct village has been managed conservatively and intelligently. While more than 60 per cent of the tax base is wild timberland owned by non-residents, the local people with only $236,957 in total assets have attempted to hold

[1] The New England town is the chief political unit and takes responsibilities for many public functions which are administered through counties in other regions.

the budget as low as possible. For the year[1] ending January 31, 1934, (Fig. 5) this town raised $5,649.54 from property taxes and spent $7,354.18 for local operation expenses.[2]

A large part of the highway expense was devoted to new construction of the State-aid road. In addition unemployment relief money was made available by the State for special work on highways. It is difficult to estimate the relation of these expenses to the normal expense to be expected in the future. If, however, good highways are to be constructed to all locations and the snow removed quickly from all highways, larger appropriations would probably be required.

Groton with about the same total area and road mileage happens to have about nine miles of high tension power line which adds $173,300 to its tax base. (Table 13) Nearly $16,000 was raised from local property taxes and the local operating expenses were $14,832.44 or double

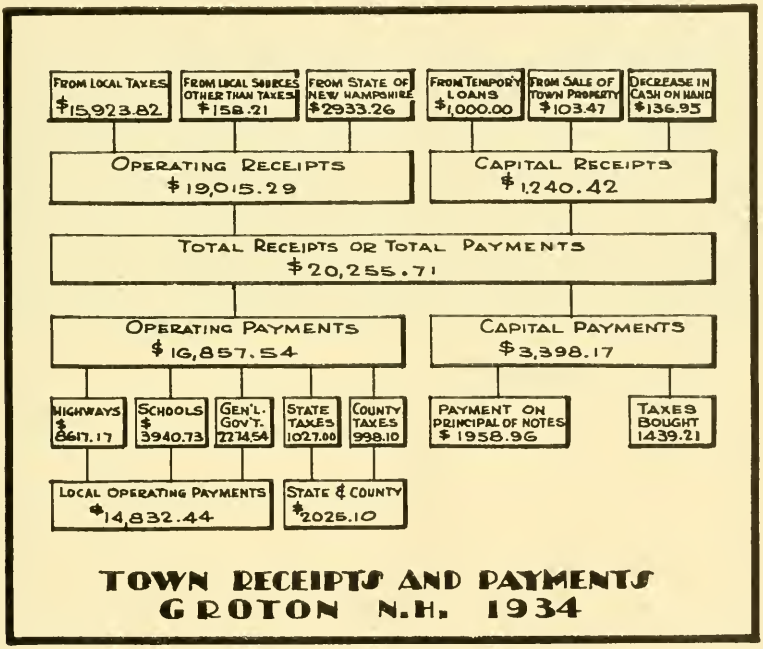

FROM LOCAL TAXES $15,923.82
FROM LOCAL SOURCES OTHER THAN TAXES $158.21
FROM STATE OF NEW HAMPSHIRE $2933.26
FROM TEMPORY LOANS $1,000.00
FROM SALE OF TOWN PROPERTY $103.47
DECREASE IN CASH ON HAND $136.95
OPERATING RECEIPTS $19,015.29
CAPITAL RECEIPTS $1,240.42
TOTAL RECEIPTS OR TOTAL PAYMENTS $20,255.71
OPERATING PAYMENTS $16,857.54
CAPITAL PAYMENTS $3,398.17
HIGHWAYS $8617.17
SCHOOLS $3940.73
GEN'L. GOV'T. 2274.54
STATE TAXES 1027.00
COUNTY TAXES 998.10
PAYMENT ON PRINCIPAL OF NOTES $1958.96
TAXES BOUGHT 1439.21
LOCAL OPERATING PAYMENTS $14,832.44
STATE & COUNTY $2025.10
TOWN RECEIPTS AND PAYMENTS
GROTON N.H. 1934

FIG. 6. The town of Groton used $14,832 in local operating expenses. This included some road construction.

that of Dorchester: $8,617 was spent on highways, $3,941 on schools, and general government costs were $2,275. (Fig. 6) The highway expenses consisted of $2,105.23 for maintenance, $611.30 for snow removal, $1,559.74 for repair of washout, $1,418.63 for unemployment

[1] From Fig. 5 it will be noted that the State contributed $3,119.40; $1,841.97 of this was emergency relief unemployment fund. This does not include a small item of State-aid for schools of about $273 which was not included here on account of difference in fiscal year.

[2] Operating expenses as used here do not include payments to State and county nor taxes bought or sold.

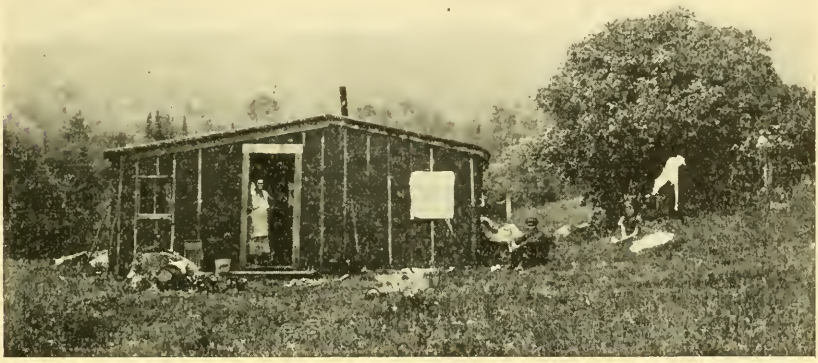
TABLE 13. *Comparison of tax base and tax problems in Dorchester and Groton.*

	DORCHESTER			GROTON		
	Assessed value		Taxes	Assessed value		Taxes
	(dollars)	(per cent)	(dollars)	(dollars)	(per cent)	(dollars)
Occupied places	43,090[1]	18.2	965.22	45,430[3]	8.5	1,344.73
Summer places	30,135	12.7	675.02	30,550[3]	5.7	904.28
Vacant or abandoned	13,490	5.7	302.18	41,475	7.8	1,227.66
Wild lands	144,245	60.9	3,231.09	191,240	36.0	5,660.70
Mines and mining rights	580	0.2	12.99	21,300	4.0	630.48
Power line	.....	.....	.....	173,300	32.6	5,129.68
Personal property	5,417	2.3	121.34	29,005	5.4	858.55
Total	236,957[1]	100.0	5,307.84	532,300[2]	100.0	15,756.08
Population, 1930			115			202
Miles of State-aid road			9.5			5.7
Miles of used town road			24.9			15.8
Miles of little used town road			24.4			22.2
Total miles of road			58.8			43.7
Tax rate			$2.24			$2.96
Money raised from property taxes, 1934			$5,649.54			$15,923.82

[1] This includes exemptions.
[2] This includes exemptions and also uncollected taxes.
[3] This includes village which was not in the area studied.
Occupied places in special area total $37,380 and summer residences $16,750.

relief, and $2,404.77 for State-aid construction. While the road maintenance and construction serve the forestry and summer interests, most of the costs are on account of the year-round occupants. The assessed value of all year-round occupied places outside the Groton village and vicinity is only $32,880 and the tax revenue from such places totals only $900.00. It is interesting to note that the total gross sales of agricultural products was $3,798.50 for all these places. Sales of forest products from farms was $678.

If this road building were a passing phase and when once completed the occupants could devote their energies to other productive work the situation could be justified. The difficulty is that road building has become the main industry of the town, and future low road costs and the consequent curtailment of work to occupants of locations will not



The occupancy of this isolated shack was responsible for special school transportation costs.

solve the problem. A modest income of $200 to $300 per family is more needed than road service efficiency.

Roads are built mainly to service present occupants but if the completion of the roads results in no employment, the people may have to abandon these "good" roads to the occasional timber operator.

Since forestry is the chief potential resource in the town, the work on roads may well be organized from the viewpoint of forest requirements and if there is little or no work in the back areas for the occasional family, productive work should be made available, perhaps somewhere else.

The power line representing about one-third of the tax base requires little or no public servicing; and if this valuation were eliminated, the tax rate would have been about $4.39, or nearly twice that of Dorchester.

Occupation of isolated places tends to raise total costs of government and even though the State may share in the extra costs by State-aid grants the greater part of the burden is distributed over all property and raises the tax rate. A high tax rate in turn tends to discourage development of timber resources. Corporations and individuals are forced usually to strip the timber from the land because the taxes practically confiscate any expected future return from growth. This strip-

ping of land in turn results in a loss of tax base and consequently still higher rates on the remaining resources. In addition it depreciates the recreational values and lessens the possibility of summer development.

Thus a vicious downward spiral of depletion of forest resources and high tax rates may be initiated if the ratio of local costs of government to assets become too narrow. Once underway this downward spiral is difficult to check.

The town of Dorchester has held the tax rate reasonably low. The western half of the town with the exception of a few places near the Canaan border was abandoned and the highway and educational facilities were mostly confined to the eastern part. Under these conditions and with good management of fiscal affairs the tax rate in 1934 was $2.24.

Then several families moved into locations in the western part of the town abandoned years ago. It was estimated in December that the extra costs due to the location of these families would total about $2,000. State-aid will absorb part of this cost, but the town faces the problem of a shrinking tax base and increasing local costs. Even with intelligent local management of public affairs the town may face a rapid rise in tax rate and a continued depletion of forest resources. In the end the town will need to restrict its services or else the larger public will have to share their cost.

The future of these back areas seems to be largely in development of timber resources and in further increase in summer occupation. The exploitation of these resources through local taxation to maintain obsolete public services will result eventually in decreased local employment and depopulation of the entire area.

A more direct and socially productive method should be worked out of relating the local people to the forest resources. If in the final analysis local workers are not needed in productive activities in the area, any public subsidy should be temporary in character and directed toward readjustment.

HISTORY OF THE AREA

A brief review of the history of this area furnishes an important background for consideration of its future.

Soldiers passing through in the Indian Wars of 1760 had taken an interest in the possibilities of the region. Some of these returned as settlers within the next few years. By 1772 the settlement of the interior was well under way, and most of the land had been allotted. For the next 30 years the clearing of land and establishment of homes were pushed with vigor. The first development was a self-sufficing agriculture, but as more tillage land and pasture became available on some farms, additional products were raised for sale. Many farms never developed beyond the self-sufficing stage, and some of these were not occupied for more than 30 or 40 years. Fat cattle represented the principal enterprise in the early 1800's, but beginning about 1828 the sheep industry developed rapidly. Production in the area was probably at its peak in the period from 1835 to 1845. Land clearing had been extended, and cattle and sheep farming were established to the limit of the land resources. The better soils were still fertile, and

crop yields were good. The trend of conditions in back areas is difficult to trace from this point on because many towns comprise intervale lands that persisted in agricultural use as well as back uplands that were abandoned. Total data or averages such as census reports fail to describe either situation. Industrial developments in some of the villages resulted in rapid expansion of population and creation of markets which obscured the situation in other parts of the town.[1]

In the earliest times the advantage in location was not great. Self-sufficing agriculture and the work of clearing meant that most activities were centered on the farm, and trips to market were infrequent. It is said that the hills were settled and cleared first because the clearing was easier and the location was preferred for safety. But as agriculture advanced to a stage where some operators were able to sell products and as local centers in the valley became trading posts, the location of the farm and the quality of the land became more important. With the completion of the fourth New Hampshire turnpike from Boscawen to Lebanon in 1804, and the Grafton turnpike from Andover to Orford in 1811, the interior upland was placed at a disadvantage. The extension of the railroads up the valleys on both sides of the area in the period 1847 to 1853 gave the valley farms more satisfactory access to the expanding markets in factory towns of Massachusetts.

Later on, competition with the standard products of the developing West brought hardship to the agriculture of the region, and technological developments of agricultural production placed the hill farm with small rocky fields at a tremendous disadvantage.

A comparison of the location of roads and occupied places in 1860, 1892 and 1934 reveals the trend and location of abandonment. (Plate 7, p. 39) Only 289 of the 916 locations existing in 1860 were occupied by year-round residents in 1934. Using the population-to-farm ratio in Groton as a base, it is estimated that the population in the area was approximately 4,700 in 1860 as compared to 883 in 1934. It is further estimated that at the peak of the livestock population, the area supported 5,500 cattle over 18 months old and 21,068 sheep over six months, as compared to 957 cattle and 167 sheep of similar ages in 1934.[2]

In surveying the forest cover in some detail in the town of Dorchester, Mr. Carl Walker, by noting stone walls, tree growths, etc., was able to map the areas of land which had been originally cleared in comparison with present land-use. (Fig. 7) Most of the small scattered areas of open land back from the road on the 1934 map are no longer used for either tillage or pasture. These represent central portions of former large fields or pastures which the timber has not as yet fully reclaimed. This indicates 43 per cent open land about 1860 as compared to 13 per cent in 1934. Forest growth is the natural climax in New England

[1] Edward N. Torbert, "The Evolution of Land Utilization in Lebanon, New Hampshire," Geographical Review, 25: 209 (April, 1935).
Harold F. Wilson, The Hill Country of Northern New England, Columbia University Press (New York, 1936).

[2] These early inventories list cattle 18 months or older and sheep 6 months and over. In the pasture season the total number of cattle and sheep would be about double the inventory.

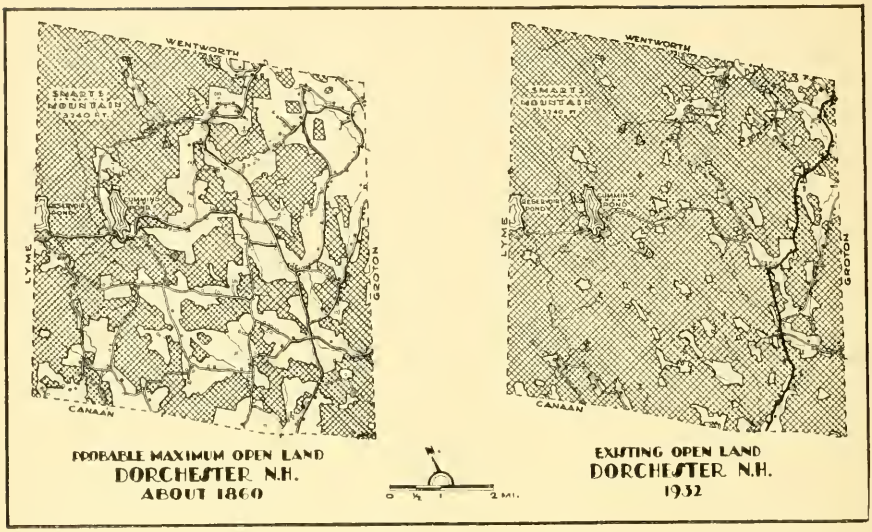


Fig. 7. The forest has reclaimed most of the former cleared land in Dorchester. The open places not now serviced by roads are mostly the center portions of old fields or pastures not yet taken over by the timber growth.

and has taken over the land to a large extent. The old cellar holes, the lilacs and rose bushes, the stone walls, the old mill sites, the small cemeteries are mute evidences of the former habitation. This recession of agriculture is illustrated in the data taken from town inventories: for Dorchester from 1801 to 1936, and for Groton from 1834 to 1936. These two towns were chosen for this purpose because the records were available and because both towns lie very largely within the area studied.

Sheep do not appear on the town inventories in 1801, 1810, and in 1820, and probably none were present. In 1830 the inventories reveal only one flock of sheep—90 head, but by 1840 the sheep industry had developed amazingly. (Fig. 8) In that year the inventories indicate 2,917 in Dorchester and 2,887 in Groton. This is one instance in which the New England farmer forgot his conservatism and followed a "boom" due to the high wool prices and the general sheep enthusiasm. One might easily conclude that all the farmers had taken up the sheep industry, but the inventories indicate that some men held on to cattle only.

These early inventories reveal something of the organization of the farms. For instance, in Dorchester in 1801 while the majority of farms had small herds, six had developed beyond the self-sufficing stage and had over ten animals of the cattle kind. In the inventory of 1840, when sheep competed with cattle, the organization of the farms varied greatly; 57 farms had less than ten animal units and might be considered self-sufficing. Twenty-nine farms had more than this and could be classed as having commercial aspects. (Fig. 9)

Four of these larger farms had over 100 sheep, indicating a quick response to the sheep development. In this group one farm with 15 cattle and 189 sheep and one with four cattle and 239 sheep show a contrast in the competition between cattle and sheep. Two farms with 15 cattle each had small flocks of 25 and 33 sheep. The development in Groton followed a similar course.

It is suggested by several writers that lands were cleared rapidly for pasture between 1830 and 1840 and also that clearings on the few abandoned farms were pastured. At the very peak of livestock population probably the pastures were over-grazed. The farmers were utilizing the flush period that exists for the few years when the fertility in the forest humus is first set free.

Reduced pasturage and the falling prices of wool lowered sheep numbers. Some operators went out of sheep quickly, and others maintained large flocks even as late as 1890. Evidently individuals, in the light of their peculiar resources, farms, skills, and interests, reacted differently to the changing economic situation.

At various periods in the last hundred years opportunity for labor off the farm has had an influence on the agriculture of the area. For instance, in Dorchester along the Mascoma River, an area now completely abandoned, four mills were operating before 1860. No doubt people from local farms had a part in harvesting and milling of timber resources. This local timber industry probably began about 1830 and

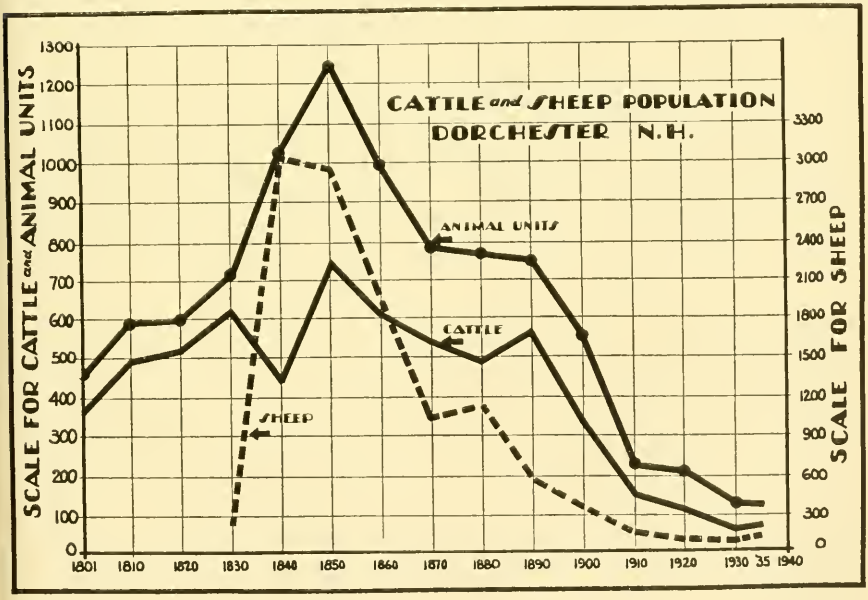


FIG. 8. Livestock production was at its peak in Dorchester from about 1840 to 1860. Cattle numbers held fairly constant from 1830 until about 1890. The rapid rise and fall of the sheep industry resulted in an expanded animal industry in the two decades preceding 1860. (Cattle over 18 months and sheep over 6 months were listed on the town inventories.)

intermittently has continued until the present. Later on, probably about 1885, mining of mica and feldspar in several sections of the area furnished employment to local farm people and brought in new families.

We have at hand no quantitative data as to the extent of the timber or mining influence in this area in drawing people away from agriculture, but in other sections of the State the development of factories has had a profound influence on the agriculture and the people.[1]

No doubt these opportunities for work off the farm had a different appeal to men in different circumstances. The man at the end of a

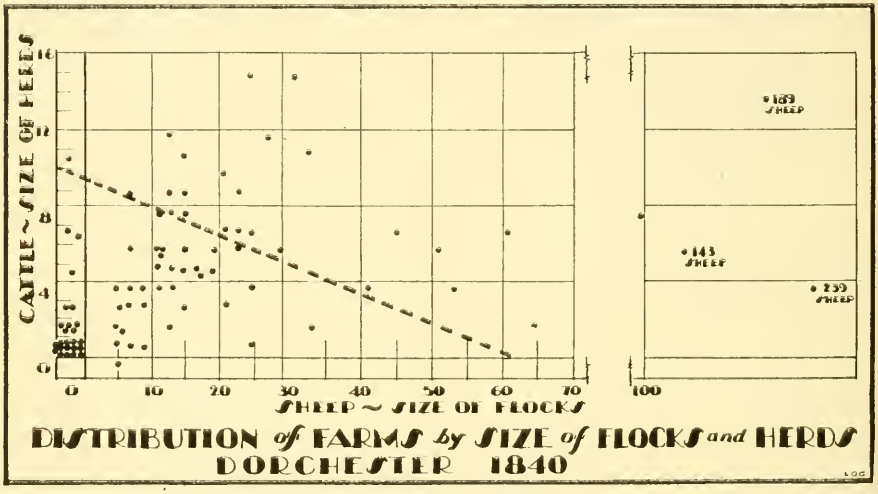


FIG. 9. Each dot represents an individual farm. The farms with more than 10 animal units appear above the dotted line. Evidently in the early periods individual farmers had developed well beyond the self-sufficing stage. About one-third had more than 10 animal units listed on the tax inventory. Since only cattle above 18 months and sheep above 6 months were listed, the actual numbers would be larger. Note that three flocks of sheep numbered 143, 189, and 239 respectively.

mountain road with small fields and little resources could well afford to work for wages. When this work ceased locally, he would be quite ready to follow the job to some other location in preference to returning to his small unproductive farm. The assumption is common that in a declining agriculture the more resourceful and abler people are the first to move out. In this instance it is probable that at certain periods the less resourceful were attracted away from local farms and that at other times the ablest sought better opportunities elsewhere. Abandonment of land according to productivity and the migration of people according to ability have not been as "liquid" as some theorists have supposed.

The impact of this migration of young people might not register fully upon the agriculture for a number of years. The movement was

[1] Harry C. Woodworth, "Nute Ridge," New Hampshire, University Extension Service, Extension Circular 68, April, 1927.

probably not due entirely to changes or to discouragement in the local agricultural situation. The developing industrial system, the building of railroads, and the conquest and settlement of the West beckoned attractively to young men of all classes.

The rapid decline in agriculture after 1860 was accompanied by migration of families into as well as out of the area. This change in personnel was probably part of the adjustment process. The movement both contributed to the decline and resulted from it. New families with different resources and capacities were responsible for shifting proportions of labor, capital, and land.

Very few of the present residents are descendants of the original settlers. Of the 85 surnames in the 1840 inventory for Dorchester only Carr, Burley, Eastman, and Smith remain, and this particular Smith is not native to the region. Of the 90 names for Groton only Butterfield, Albert, Bartlett, and Matthew remain.

Work off the farm continues to be an important factor in the income of local people. This situation in which a considerable part of the cash income comes from sources not directly related to the farm is characteristic of New England. Near industrial centers the occupants of farms or members of their families commute to jobs in the city. A pattern of commercial and small part-time farms often occurs even in the more intensive agricultural areas.

The important difference in these back areas and the more densely settled regions is that in the back areas total income is very low, employment on local enterprises has practically disappeared, and the people have become more dependent on public employment, such as work on the roads and snow removal. The roads are expensive to build and costly to maintain on account of grades and hills. Individuals have abandoned farming but remain to build the roads.

The trend in revenue from property taxes in Groton, as shown for 100 years by five-year periods in Fig. 10, is difficult to relate to productive activity within the town. It does indicate a change in source of employment for the people. Up to about 1918 the total revenues from property taxes were low, but in the face of almost complete abandonment of agriculture and greatly diminishing population the total tax revenues have greatly increased in the last two decades.

Historically, agriculture and population have declined definitely and steadily since 1860. An area that once supported thousands of cattle and sheep now has little agriculture left. What factors brought this decline, and are these forces still operating to bring still further abandonment?

It is important that we realize that the near abandonment has come about through the decisions of hundreds of individuals over the years. Rugged individualism and not regimentation brought people out of the area. The lure of better opportunities elsewhere was probably the determining factor in the decision of the individual.

On the one hand declining pasturage and yields and declining agricultural prices, and on the other hand increasing opportunities in industry, railroading, and in prairie farming were the chief reasons for the migration.

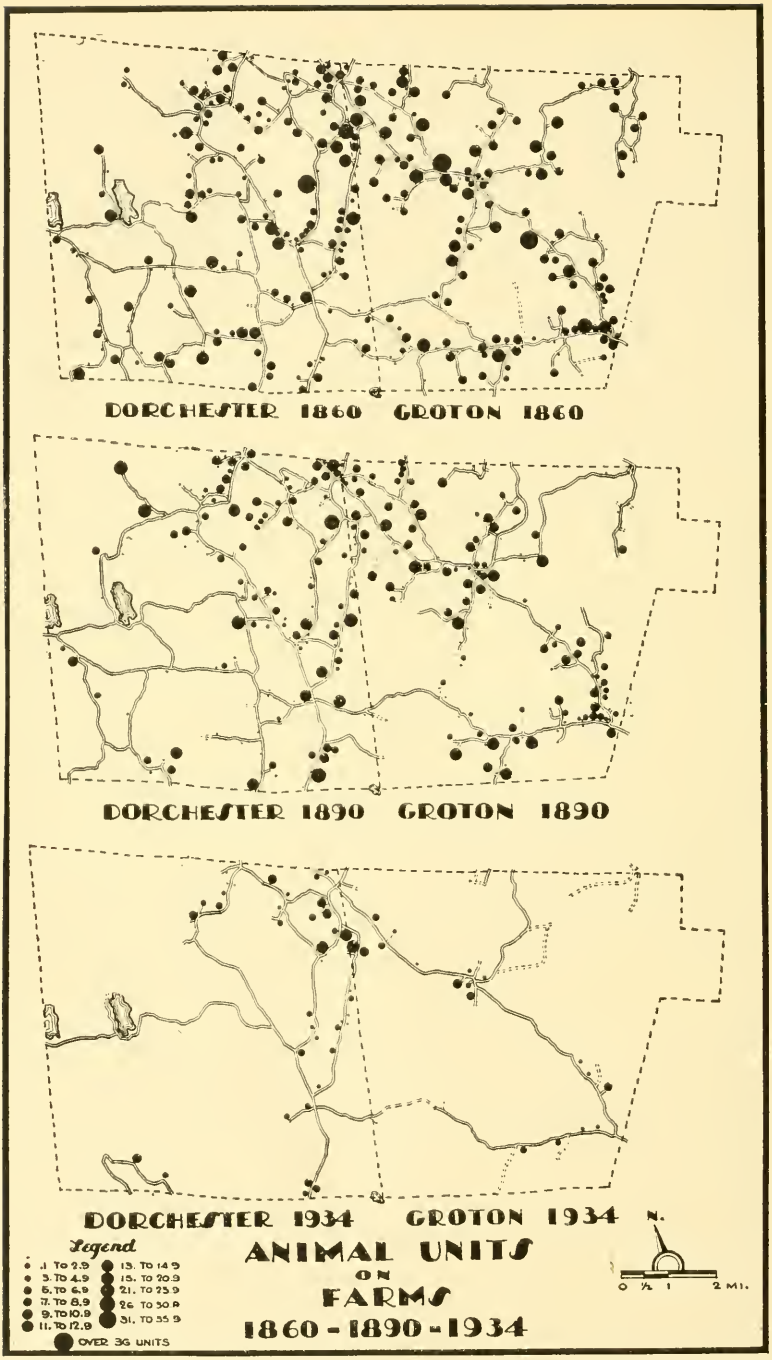


FIG. 10. The number and location of animal units for 1860, 1890, and 1934 were developed by associating the town tax inventories with names on farmsteads on all maps. (There are probably minor inaccuracies on the 1860 and 1890 maps because old residents were not positive about some locations. Between 50 and 100 animal units were not shown for Dorchester in 1860 and 1890 and for Groton in 1860 and 1890, as names on the inventory could not be reconciled with names on the map and older residents did not recall locations.)

Historically, certain families clung to an aggressive agriculture long after most farming had disappeared. There is an indication that some of these families were among the most skilled, for they had large herds of cattle and flocks of sheep. Some, no doubt, stayed on through sentiment for the old farm long after their better judgment indicated opportunities elsewhere.

The summary of income of the present occupants gives some indication of the meager opportunities under present conditions and suggests at least that the same forces are at work which brought about the decline from 1860 to date.

DISCUSSION OF PUBLIC POLICIES

To sum up briefly the descriptions of problems and conditions to this point, we have an area of 190,000 acres largely covered by stands of culled timber, inhabited by 289 more or less scattered families, some of them stranded with meager resources, income and opportunities, confronted by increasing public finance problems and decreasing timber resources. Since Civil War times the trend has been a definite decline in agriculture and population. What is to be done about it? What can be done?

Such problems involve people more than land, and the remedies must come through social as well as economic measures. The well-being of the individual families and the broad interests of society as a whole must be taken into account. In even this small area the future is fundamentally related to the development of national activities.

Since these complex social and economic relations exist, affecting the lives of people closely and intimately, it is important to take some notice of certain factors and become oriented to them before discussing possible State policies.

1. There is a balance or equalization always operating between agriculture on the one hand and industry, trade, and services on the other. The movement of workers from one to the other depends on the relative situation in agriculture and the other opportunities, so the use of and demand for farm land in New Hampshire will depend on the continuing development and expansion of the industrial system. That the recent trend in efficiencies in industrial production will eventually result in more and new types of production and the distribution of greater volume of the many varied products seems to be a sound conclusion.

In this event the demand for producers will greatly expand, and those capable of taking part in aggressive production and distribution will find it possible to share in this increased total and per capita dividend by participating in either commercial agriculture or industrial life. There is little probability that the capable and the strong will be content to step back to a self-sufficing existence.

2. The problem of adjustment of people to land resources involves basically such immeasurable and elusive factors as standards of life, philosophies of life, and ambitions of people. These can easily be misinterpreted and misjudged. Each family—and each individual—requires a different weighting as to what may be important to its best interest. Who is to judge, who can judge whether this situation or that is best for an individual family? Society has built through the

years an artificial standard of life that has gradually become more and more complex. Must all conform to this pattern, or is it possible that in some instances nonconformity to the general standard brings a richer content of living to the particular family? Who is to say that the man who hunts and fishes and loves to be alone in the forest is in maladjustment with land even though only small sums of money flow through his hands?

It is far safer in this complex life to place the responsibility for decisions in these matters in the hands of the individual, making restrictions only where large public or social costs and considerable detriment to the public interest are involved.

Dorchester Center. The church, the town hall and the school were built to accommodate a large population, but now only the town hall is used.

3. People in general reorient themselves in this complicated social order rather slowly. The older person who has found his lifetime skill no longer in demand or who has faced defeat and retreat over a period of years finds realignment to more complicated conditions very difficult and is probably happier under a situation of some security even though associated with very meager living content than under one of new activities and changing skills that is associated with a feeling of great insecurity. Security is a great human goal, and after all is part of the content of living. With many, especially older people, it is often the dominant factor.

4. Our thinking as related to farm economy has been built around the man in the prime of life who can aggressively push productive processes. Unfortunately we do grow old, and in addition many both old and young lack the physical or mental ability to operate a large commercial farm. Many small farms in New Hampshire are the havens of older men and those in ill health from both city and country, both rich and poor. What will be the future trend in migration from cities and from other rural sections of different classes and ages of people who love the country? With lessening demand for older men in industry and with a trend in the direction of old age pensions, will more people retire to plots of land?

Small farms located along main roads in a persisting community are useful and attractive for this purpose even though they have little

importance commercially. If thus intermingled with commercial farms and other part-time places, such use results in little additional cost for public services and the maintenance of these small homes directly aids and supports the public finance structure.

On the other hand, the occupancy of small isolated places by families from the cities without funds or resources is a definite liability to the State. The public finances of local back towns are not only strained to the limit in servicing such locations, but a future serious relief load is in the offing. To what extent can the State afford to take over the people that large eastern cities have broken and discarded? Every isolated low-value location is an invitation. We can encourage the retirement of families in persisting communities. We should discourage such retirement to areas where adequate administration of the relief load, the social cost of medical care, and the public cost of roads and schools will be very high in comparison to other locations and where abandonment is in the public interest.

5. Nationally there is a relation between numbers of people and the requirement of land. This requirement depends somewhat on standards of living and dietary habits of the masses. The present population with present food habits requires about 300,000,000 acres of crop land for its own needs and another 30,000,000 for production of export products. There are now in excess of 15,000,000 acres over this amount available. Even with a change in food habits and a moderate increase in population, the trend seems to be in the direction of making good land more productive rather than depending on poor land.

The population is slowing down and it is estimated by Baker[1] that by 1950 a peak in total numbers may be expected.[2] This situation suggests that the pressure of people on the land resources is not increasing and that relative prices of agricultural products are not likely to be large enough to stimulate the rejuvenation of abandoned areas.

Now that the Nation is maturing and the population numbers becoming more stabilized, the tendency will be even more marked for agricultural production to shift to the most economic locations. Thus over a long period the location of production is a more or less "fluid" situation. Present trends of each country striving toward nationalism in so far as food is concerned suggest little hope of exporting large amounts of agricultural products at high prices. Therefore, there is little to suggest that commercial agriculture will increase in areas where production costs are great in relation to markets.

6. From the New Hampshire point of view much depends on the shifts of population within the country. Will eastern cities increase, remain stable, or decline under conditions of a stable national population?

We have lived long under a condition of expanding total population and have come to expect increases in most sections as a matter of course.

[1] E. O. Baker. Population trends and the National welfare. U. S. D. A.
[2] This estimate assumes very little immigration.

With a stable population the situation is different. One portion of the country increasing in population may mean depopulation in another area. Any large expansion of population in New England or New Hampshire is questionable and can come to pass only if our resources and opportunities outbalance those of other places.

If we assume present population for New Hampshire and especially present rural population, the trend again would be continuing readjustment of people to the opportunities and resources of the State. With many good farms in good locations not operated, the general trend to be expected would be continuation of retreat in areas offering little opportunity. To realign our people so that good lands are used more intensively and the poor lands less intensively is progress and not retreat. To save and develop good farms and divert poor ones to forest growth is a logical economic trend.

7. From a local town point of view, if present population is assumed, there is the same need for people to adjust themselves by migrating from poor to good locations. But in a small unit such as a town, assumption of present population is not sound. In the years ahead the population of a town will depend on the relation of its opportunities to those in other towns in this and other states. The local townsmen should realize that the problem is primarily one of people and their opportunities, and that in the long period any particular town is incidental to the larger objective. The purpose of government is service to the people. Population must be related to resources and opportunities; and if these have been exploited and diminished in one town, the ratio of people to land has been disturbed and the new alignment may mean migration of families to resources elsewhere. There is a social loss in holding people in a community for any long period after resources have been dissipated or when better opportunities are available elsewhere.

8. A rural community must have something in the way of services or products to exchange for the products of other communities. There is little in American political or economic life to suggest that the people in a rural area can receive a fair share of the national dividend in any other way than by this exchange of their products or services. Any small community that cannot so organize itself as to trade its services or goods is bound to have a rather low content of living. This rather obvious statement is made because some of the local people even in the more isolated places seem to be waiting for something to come to them, and have given their situation little analysis. State-aids, relief, unemployment funds, special road grants may bring temporary income but are flimsy foundations on which to build for permanency and security.

In considering the adaption of people to forest resources the changes in technique of forest harvest and management made possible by the truck and tractor and the development of good main roads should not be overlooked. A few years ago the worker had to live reasonably near the place of operation. Now it is possible to transport men a con-

Wolf trees have been left in the process of lumbering.

siderable distance in a short time, and if the forest area is to be either in the hands of large private operators or publicly owned, there is no particular advantage in having men scattered over the area. It may be more logical that they be located where they can assemble at definite points easily. Men are more likely to work in crews than singly.

Discussion of Four Programs

It is not to be expected that these difficult social and economic problems can be solved easily and speedily through some simple device. Several inter-relating policies will be needed and progress toward improvement will be very slow because (1) the problems are really difficult and (2) progress must come in large part through decisions and actions of local people. Considerable delay is likely to obtain before local people become fully aware of their situations and agree as to the needed action program.

The individual families need first of all productive employment. In the absence of such employment their migration to other areas to take advantage of better opportunities would be socially and economically sound. This has been the trend for many years and complete abandonment is one solution to the problem, provided the people can find and utilize better opportunities elsewhere. One wonders if they can improve their lot by mere migration. Perhaps some would and some would not.

On the other hand, there seems a possibility for the rebuilding of a permanent, economically and socially healthy community through four inter-related programs:

1. Realignment of people to the resources and institutions by relocation of isolated homes to the vicinity of main roads.
2. Reorganization of local government units and readjustment of public services.
3. Development of resources, mostly timber resources.
4. Relating the local resources to local people through employment.

The realignment of people to resources, roads, and schools, is essential to the better content of living for most families and is a prerequisite to the development of timber resources because of lower costs of public services. The reorganization of local political units and public services is essential before resources can develop in order to avoid the handicap of high taxes. On the other hand, efficiency through reorganization cannot be effective without development of resources and the employment of people on them.

It would be futile to attempt reorganization and high efficiency of local government without an accompanying program of employment of people in developing resources. Serious maladjustment of people, land, and institutions is the fundamental problem, and the reorganization of local government alone would in some instances merely pile up the relief load.

The three measures, realignment of people, reorganization of local government, and the development of resources, do not solve the local people's problem unless the developing assets in timber can in some way be related to them through employment.

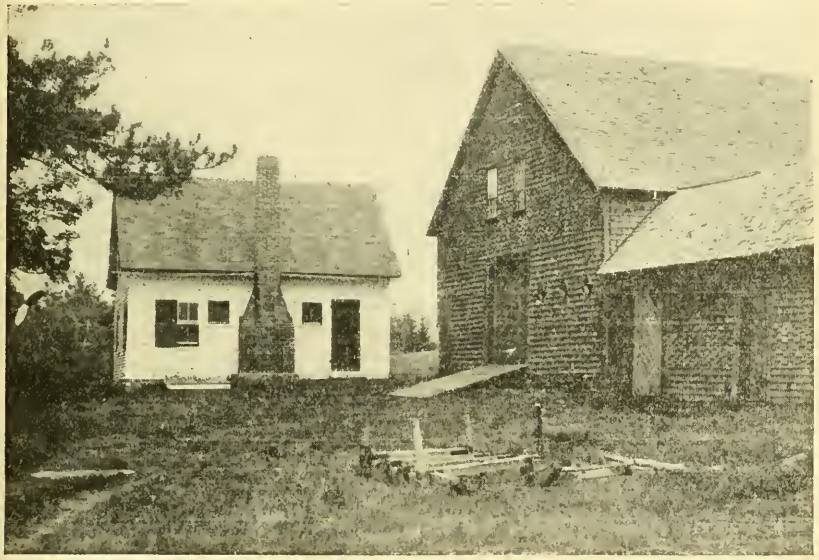
Feeling deeply the difficult situation facing these communities and the individuals and anticipating the serious social loss in wasted lives and hardship if no adjustments are made, we propose to discuss frankly and in detail the problems involved in realignment of people, in reorganization of local governments, and in developing timber resources. At first blush many may not take kindly to either the suggestion of realignment of people or the reorganization of local units. But so long as these contain the hope and possibilities of raising the content of living of numerous stranded people such a program may be our best alternative.

Communities and individuals are continually faced with decisions in terms of alternative actions. These communities may have the choice on the one hand of attempting to maintain present locations and local government institutions with a low content of living or on the other hand of changing locations and readjusting local governments, with a better content of living. The former leads to eventual abandonment and the latter gives some promise of the rebuilding of a healthy community.

We make the adjustment from the old to a new car rather easily. The brighter color, the pride in ownership of the new completely obliterates the sting from our conscience in junking the old one which has served us long and well. We expect the new one to serve us better, and we have assumed at all times that the old would be outmoded. But

through long tradition we cling to locations and the political machinery established over 150 years ago.

The necessity and possibilities of realignment of people to resources can be studied by arbitrarily dividing the entire area into sub-areas by priorities of location. In doing this both the opportunities and the cost involved in public and social services should be considered. Such a task can most accurately be done through many conferences with local people, and this should be the procedure if the action stage should materialize. However, for illustration and study of the problem in



Buildings have been remodeled into summer homes on a few farms.

more detail, the area was divided into five main sub-areas according to priority. (Plate 8, p. 40) This classification was varied for Alexandria on account of recreation possibilities and a greater concentration of locations.

Realignment of People

Area 5, which includes the more isolated locations and is unshaded on the map, (Table 14) contained 70 occupied places with an assessed valuation of $58,541 or an average of $836.00. The tax revenue totaled $1,598, or an average of $22.83 per location. For the most part these farms are valued on the basis of potential timber possibilities; if all were abandoned and the buildings destroyed, the loss of tax revenue would be negligible. The actual additional tax revenue associated with the occupancy of the 70 places is not in excess of $550 annually.[1]

[1] If based on average assessed value of wild land of $7.74 per acre, the average valuation of the 70 farms would be $557 instead of $836, and the tax revenue would be reduced approximately from $22.83 to $14.83.

TABLE 14. *Summary of the assessed value, taxes paid, and gross sales of agricultural products of occupied places grouped by priority of sub-areas. (See Plate 8)*

Sub-areas in order of priority	No. of farms	Value of farms		Gross sales of agricultural products		Taxes paid by occupied places	
		All (dollars)	Average (dollars)	(dollars)	(per cent)	(dollars)	(per cent)
1	35	54,130	1,547	17,892.50	24.5	1,845.77	15.5
2	11	28,820	2,620	11,340.75	15.6	1,239.15	10.4
3	81	104,945	1,296	24,092.00	33.0	4,397.11	37.0
4	51	60,505	1,186	6,680.60	9.2	1,707.52	14.3
4 S	17	15,080	887	1,569.32	2.2	618.48	5.2
4 SR	15	14,700	980	548.60	.7	340.54	2.9
4 R	9	5,950	661	571.25	.8	159.96	1.3
5	70	58,541	836	10,238.52	14.0	1,598.24	13.4
Total	289	342,671	1,186	72,933.54	100.0	11,906.77	100.0

A brief description of the situation associated with these 70 locations is important. There were 5,265 acres in farms, 1,149 of which were classed as tillage. In livestock, 73 cows, 26 heifers, 39 horses, 1,550 hens, 16 pigs, and 53 sheep were inventoried. Sales of agricultural products totaled $10,238, a considerable portion of which was for poultry products. Sales of forestry products amounted to $3,602. The 191 tons of grain purchased cost $6,213, and total operating farm expenses were $25,115. Value of products consumed on the farm was estimated at $9,750. Income for labor off the farm totaled $12,708, and receipts from relief, pensions, etc., totaled $5,902. A study of these data will indicate that the average occupant in Area 5 has a very low living content. An average of $90 cash per family for living expenses, without allowance for debt, does not indicate a very logical reason for remaining in this sub-area. In addition the children are deprived of certain opportunities. Even though tuition is free, these individual families cannot afford transportation to remote high schools.

On the expense side, the occupancy of Area 5 involves the transportation of 40 children at an estimated cost of $4,000 and the additional expense of winter and summer road service. There are 105 miles of road in Area 5, of which 11 miles including State roads are required as links between other areas. Probably $11,000 to $15,000 net expense is the price of occupancy of sub-area 5. If it were abandoned, the savings in cost of public services would equal the assessed values of occupied farms in 4 to 8 years. If it were purchased and resold for timber value, the gains in public finance would be important. Such realignments are essential as one step in the process of adjustment. This program to be effective would require the use of zoning power as a check against the building of shacks or dwellings in abandoned areas.

A State policy requires either the eventual abandonment of such areas as 5 or the building of good roads and the maintenance of costly services to each location. Since it is not socially profitable to build a

$15,000 road to service an $800 location, the best State policy is one of encouraging the relocation of these people to present public services in better areas. The situation in Areas 1 to 4 can be noted by studying Table 14 and Plate 8.

A few attractive lakes have possibilities for summer development.

Reorganization of Local Governments

The reorganization of local political units is probably not a popular theme on account of a strong town consciousness; and yet in the interest of a program to bring a better content of living to the people of the area, the possibilities should be explored.[1]

The abandonment of places, the decline in agriculture and population, and changes in transportation bring need for the readjustment of local institutions. Where decline has been severe, the town boundaries represent a unit too small for efficient administration. Where only a few families are left in a town, the real need of government is reduced to a minimum; and yet the local superstructure continues to result in high per capita costs.

Probably the average town is too small a unit for the best administration of roads and schools. In the case of rural towns where only a few families remain, effective and efficient administration is definitely handicapped by the small political unit. Modern road building and maintenance require large and expensive machinery and very little hand work. Schools, especially high schools, are most economical and effective when the unit of administration is larger than the town.

For purposes of illustration, Groton is studied in some detail (Fig. 12 and Table 15), and this town probably is a sample of others in the

[1] There have been 34 changes in political units in the State since 1790, but these have all been by dividing existing towns or setting off portions of several towns to form new and smaller units. It is far more difficult to combine than to dissect.

State. If the eight places in Area 5 in Groton were abandoned, their tax revenue would probably shrink from $246 to $146, a loss of $100. This would leave three groups of occupied places separated by high ridges. An area in the northeast corner with three farms on the intervale or plains in Cheever logically belongs with Dorchester, to which it is most accessible. Since it is adjacent to the more thickly settled area of Dorchester and is near the schools, the additional burden to that

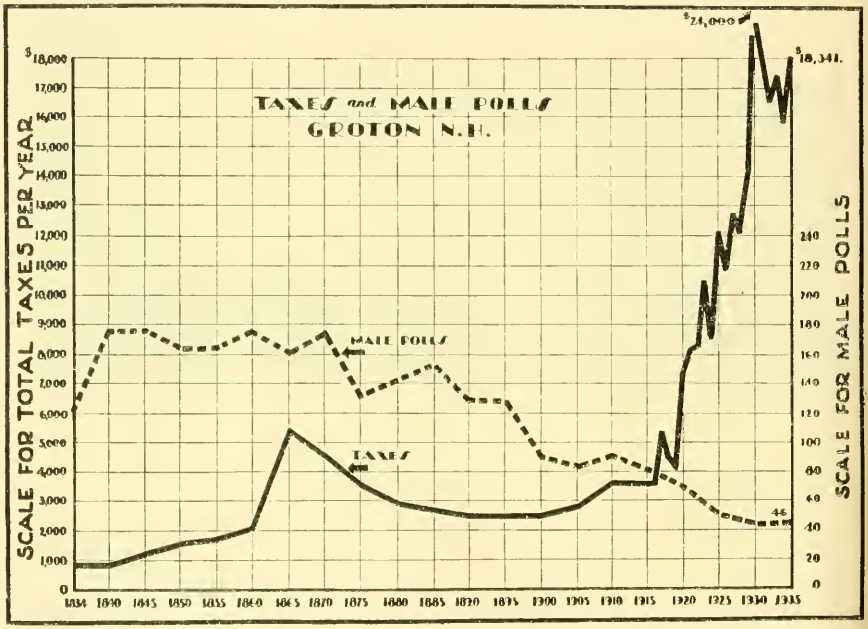


FIG. 11. The agriculture in Groton has all but disappeared, the mining activities have ceased completely, and the population has dwindled. But the actual taxes raised have risen to four times the 1915 assessment. The timberland carries a large part of this added burden. The eight miles of power line of recent construction is a factor and bears about one-third the total tax.

town would not be disproportionate to the revenue from the $4,500 valuation.

The eight occupied places at North Groton are now serviced by a State road from Rumney; and if this small community persists, it is likely to be on the basis of commuting to Rumney or as a center of forest operations. In either case the area is logically associated with Rumney. The school children could be transported to Rumney at slight expense, and the road cost associated with these locations would be the maintenance of the State road by the State and a very limited mileage at North Groton by the local people. The occupied places at North Groton have an assessed valuation of $9,700, and the tax revenue from them amounts to $287 annually.[1]

[1] On June 1st, 1937, only seven places in North Groton were occupied. One farmstead had burned. The valuation of occupied places had been reduced to $6,700, the tax revenue to about $225, and the sales to approximately $164.

That portion of Groton which is near Hebron could logically be joined with Hebron. The school problem would be one of transportation of children. The road problem would be confined to about four miles through rather level land.

The present town operating cost is approximately $14,000, not including payments to State and county or interest on principal payments. A conservative estimate would place the social savings in such a reorganization at nine to ten thousand dollars.

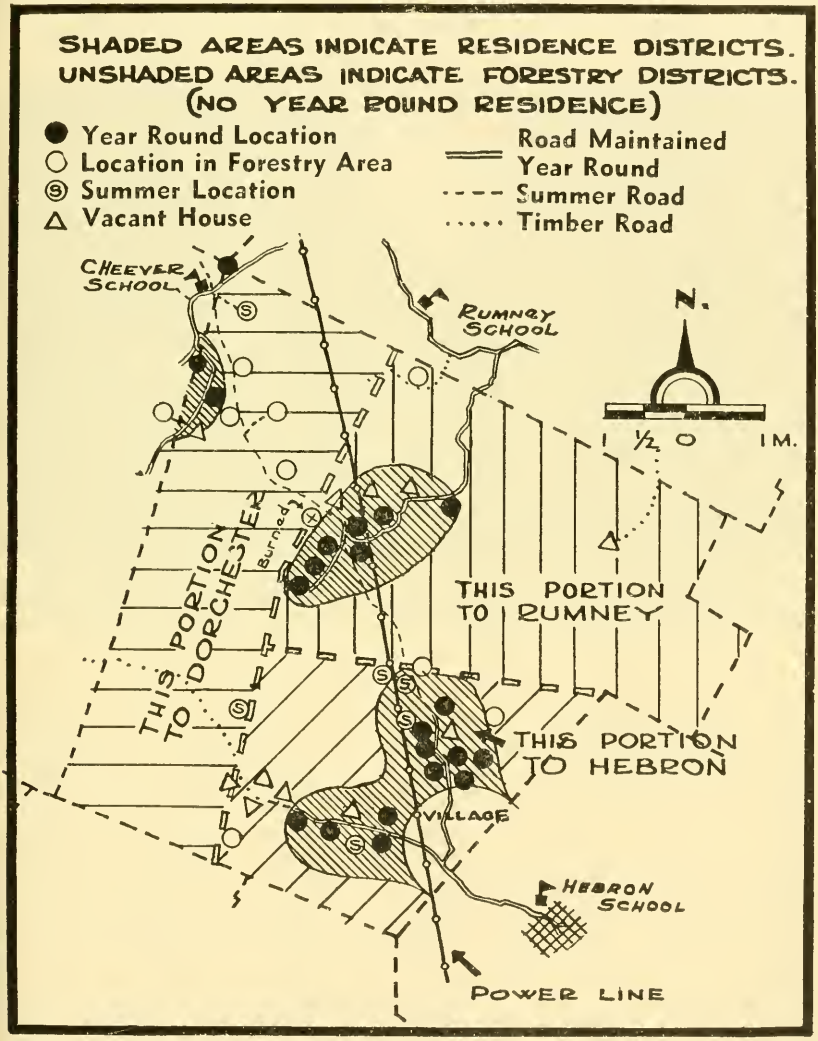


FIG. 12. In the process of abandonment there are now three small inhabited areas separated by two ridges. It is estimated that a social saving of $9,000 to $10,000 annually might result from reorganization of the town with three adjacent towns.

The town could be divided in such a way as to give approximately 8,000, 11,000, and 8,000 acres and $125,000, $150,000, and $225,000 in valuations respectively to Dorchester, Rumney, and Hebron.

Few towns are likely to want efficiency in local government badly enough to countenance such reorganization; yet the burden of ineffective local administration must be lifted if the forest resources are to expand and develop. Failure to bring about reorganization may carry serious consequences in its effect on each town's future.

Forestry bears the greater part of the revenue burden in back towns and cannot properly develop its future assets under the great handicap.

The maintenance of roads to an isolated place involves costs out of line with values and services.

Table 15. *Value of occupied places, taxes paid, and gross sales of agricultural products by sub-areas in Groton.*[1] *(See Fig. 12).*

	Number of farms	Assessed value occupied places	Assessed value personal property	Taxes paid occupied farms		Gross sales agricultural products
				Land	Personal	
Area 1	3	$4,500	$1,250	$133.20	$37.00	$1,362.50
Area 3	10	8,800	605	260.48	17.91	1,484.00
Area 4A	8	9,700	640	287.12	18.94	371.00
Area 4B	2	5,380	190	159.25	5.62	46.00
Area 5	8	8,300	565	245.68	16.73	520.00
Total	31	$36,680	$3,250	$1,075.73	$96.20	$3,783.50

[1] Does not include the village which is outside of area.

The State needs a policy of reorganization of local governments in certain back towns to free the forest from this excess burden.

When only a few families remain in a town, the resulting local government is usually not stable nor very representative of the tax base. It would be in the public interest to disorganize towns when the eligible voters fell below a definite limit. This would insure some protection to non-resident owners and would check the development of unneeded services at great public cost.

Developing Resources

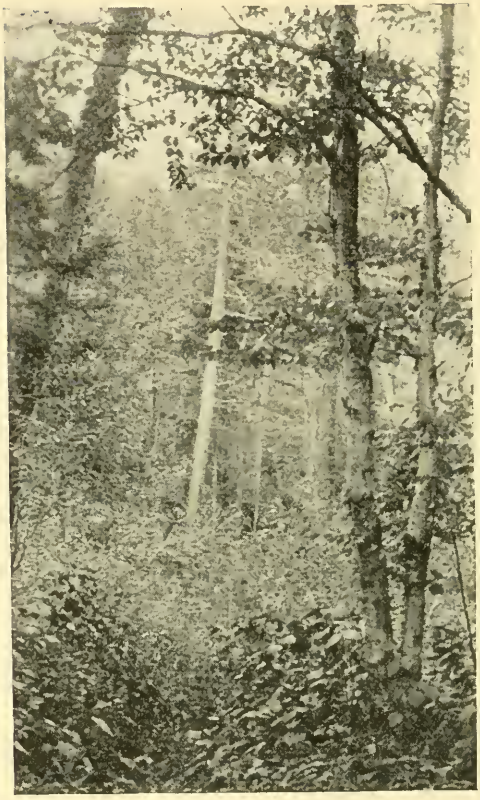
The two previous sections have been devoted to measures that would reduce the cost of public services. The resulting lower tax rates are

The cull and "dopey" trees are left standing.

quite essential to the development of local resources. Even if through a change in State policy the tax base is broadened and State aid to towns increased, relieving local taxes, such State-aid should not release local people from the obligation of economy and efficiency in local affairs.

From the viewpoint of an aggressive commercial agriculture, in which men are encouraged by expectation of profits to develop productive farms and build fine herds, only a few locations have possibilities and the area as a whole would be unimportant.

On the other hand, the area does have potential resources in timber. The climate and soil are favorable, and the present cover could develop rapidly under management. However, even if relieved of a part of the burden of taxes, the lack of capital and the long waiting period for returns will check such development. Most corporations and individuals owning timber seem to lack free capital and in any case are not disposed to long-time risks involving timber management. Of course,



Some forestry management will be needed in developing resources.

many of them have made their money through exploiting timber resources and have not fully oriented themselves to a changed condition and a need for new approaches.

It is true that this area will always be producing some timber under any system of management or lack of management. Without management the growth may be retarded and of poor quality. Individual owners will exploit the resources without regard to the future, and the returns are likely to be spasmodic with long intervals of no timber harvest. Under such conditions it would be very unsatisfactory if not impossible for local people to relate themselves to the forest land. The local people would not be needed. It would be more convenient and socially more desirable to bring in itinerant lumberjacks to log a definite area and move them out when the work was done.

The only possibility of forest management and continuous cutting according to growth yield is through public ownership or public control.

The former would require large public investments in original purchase of land as well as annual investments in management for many

years. The latter would require only the public investment in management or part of the management for a similar period.

It should be recognized that in either case management beyond a certain point in intensity would result in subsidizing the project for the benefit of local inhabitants. Under able management, however, an intensity of management consistent with expected financial returns could be projected.

In the face of the failure of forestry development under private ownership due to the long time involved, public ownership, if accompanied by trained and efficient management of the right intensity, would be a sound public policy. Public ownership without such management would contribute little to the social needs. In the meantime there is the possibility of attaining management under private ownership through a program of public control and support of forest management practices.

The benefits expected from a public forest could be obtained through a Forest Conservation Program, and less public money would be required. In such case the area would be set off as a special district, and a forester with broad social interests chosen to represent the Government. The land would remain under private ownership, and the individual owner would continue to operate and manage his timber lot; but he could enter into a voluntary agreement with the Government to do certain definite things in the development of long-time timber resources. Small payments would be allotted to the owner for carrying out definite projects. A portion of such payments would become a first lien on the timber and would be payable when timber was harvested. If these payments were equivalent to present taxes, this would mean approximately $35,000 in the area available for constructive timber development. This would involve probably a total expenditure of about $40,000 a year by the Government and perhaps a similar sum by owners for a period of years. The basis of the payment would be the carrying out of practices which the individual cannot afford to do but which should be done in the long-time public interest. Such a plan would result in the elimination of cull wolf trees, the thinning of growing stands, and the general development of the timber resources. After the initial period public investment would be diminished to a nominal amount. Local people would still have an interest both in sentiment and in actual investment, in a developing forest program. They would not be so completely divorced from the resources and the management of the resources as in a program of public ownership.

Relating People to Resources

It has been stressed again and again in this manuscript that the problem is one involving the welfare of local people and society as a whole. Since local people own very little of this land, the programs suggested would benefit them very little unless the productive forest activities were related to them. The activities should be designed as constructive social programs to divert people from mere road building to participation in productive enterprises. Such a program could furnish employment to over 100 men for 100 days or more a year, and this with a sub-

sistence farming and other income would definitely raise their living content. There is considerable diversified ability among the present inhabitants, and over a period the workers could acquire the special skills of forest management. Such a program should be a democratic approach to the aiding of the people in the area to get together in a cooperative way the land, labor, and capital needed to develop and then maintain the forest resources under scientific management.

New Hampshire is not generally thought to have a tenancy problem; and yet here are 289 families, many of whom are dependent upon land resources owned in large part by non-resident individuals or corporations.

The need and the approach should be one of relating the land resources more definitely to the communities and the local people. A Forest Conservation Program as suggested above instead of purchasing the local man's timber area would encourage him to develop the timber resources but might suggest that he live in a better area of the town. The local people who have little timberland might be encouraged to increase their holdings. It might be possible in this way to build many individuals into a position of operating their forest farms on a sustained yield basis.

The carrying out of the four programs suggested here (see page 58) is admittedly a large order. Habits and traditions accumulating for a century are not easily diverted. But after all the people of the State are its real assets, and the souls in this area are just as precious and have the same potential assets as people anywhere. They are surrounded by potential resources—timber. This suggested plan is a method of relating them to these resources.

Barns are usually in bad condition and would have to be rebuilt for commercial agriculture.

Summary

1. This bulletin reports a land use study of an area in southern Grafton County, New Hampshire, where approximately 190,000 acres of rough upland—mountains, hills and small valleys—is inhabited by 289 families.

2. One hundred and eighteen of 252 farm operators sold less than $50 of agricultural products, and only 19 sold over $1,000.

3. Most families were dependent upon outside work for their living, and little productive employment was available.

4. Approximately one half of the families had a net earned cash income of less than $200.

5. The farm operators represented a wide variety of experience, training and skills. Nearly half of them had moved to these farms within 10 years.

6. The history of the area indicates a rapid decline in agriculture beginning about 1860. Evidently farm operators were attracted away by better opportunities elsewhere. Only a few farms represent possibilities for commercial agriculture.

7. The soil and climate are especially favorable for the development of timber, which seems to be the chief potential resource.

8. Under private ownership by individuals and by corporations, however, these resources have been depleted, and the local people have little relation to the timber in employment or in management. The forest area is badly culled but would lend itself to intelligent management in building future resources.

9. The presence of scattered isolated places requires costly services in school transportation and road maintenance. This in time results in higher tax rates and discouragement to timber management.

10. One solution to the problem is to do nothing about it. In this case the timber resources would continue to decrease, and most of the inhabitants would either be forced out or would require relief.

11. It is doubtful if these particular people can improve their situation by merely moving to some other area.

12. Four interrelated programs are suggested:

Realignment of people to the resources and institutions by relocation of isolated homes to the vicinity of main roads.
Reorganization of local government units and readjustment of public services.
Development of resources, mostly timber.
Relation of the resources to local people through employment.

13. Realignment of people would result in savings in cost of public services. Reorganization of local government would lower its costs. Development of resources would provide possibilities of productive employment. Relation of resources to the local people would give the necessary employment to farm operators. A Forest Conservation Program is suggested as preferable to public ownership in this area because the people could be more easily and satisfactorily related to the resources. This would require smaller investment of public funds, and local people would retain control over their lands.

Above: Pulpwood taken near the Wentworth-Dorchester line in 1932.

Below: Lumber stocked in Hebron. Under a conservation program timber products would flow continuously in keeping with growth of resources.

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